

August 25, 1994

Docket No. 50-263

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

Dear Mr. Anderson:

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT - ISSUANCE OF AMENDMENT RE:
REMOVAL OF CHLORINE DETECTOR REQUIREMENTS FROM TECHNICAL
SPECIFICATIONS (TAC NO. M88602)

The Commission has issued the enclosed Amendment No. 89 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. The amendment consists of changes to the Technical Specifications (TS) in response to your application dated November 30, 1993, as supplemented by your letter dated June 30, 1994.

The amendment deletes the requirement for a chlorine detection system from the following portions of Technical Specifications: Section 3.2.I, 3/4.17.A, Tables 3.2.9 and 4.2.1 and Bases 3.2 and 3.17.A. The amendment also revises the limiting conditions for operation for the Control Room Ventilation System to be more consistent with Standard Technical Specifications.

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

Sincerely,

Original signed by John Hickman for

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

Enclosures:

1. Amendment No. 89 to DPR-22
2. Safety Evaluation

cc w/enclosures:
See next page

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NAME	LLessler <i>LL</i>	BWetzel:g11 <i>BW</i>	Stroswid <i>Stroswid</i>	RBachmann <i>RBachmann</i>	LMarsh
DATE	08/16/94	08/17/94	08/22/94	08/24/94	08/25/94

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

Monticello Nuclear Generating Plant

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DATED: August 25, 1994

AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. DPR-22-MONTICELLO

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

NORTHERN STATES POWER COMPANY

DOCKET NO. 50-263

MONTICELLO NUCLEAR GENERATING PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 89
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 November 30, 1993, as supplemented June 30, 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-22 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. 89 , 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



Ledyard 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: August 25, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 89

FACILITY OPERATING LICENSE NO. DPR-22

DOCKET NO. 50-263

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 areas of change.

REMOVE

48
60e
63
69a
229u
229v
229y

INSERT

48
60e
63
69a
229u
229v
229y

3.0 LIMITING CONDITIONS FOR OPERATION

4.0 SURVEILLANCE REQUIREMENTS

F. Recirculation Pump Trip and Alternate Rod Injection Initiation

Whenever the reactor is in the RUN mode, the Limiting Conditions for Operation for the instrumentation listed in Table 3.2.5 shall be met.

G. Safeguards Bus Voltage Protection

Whenever the safeguards auxiliary electrical power system is required to be operable by Specification 3.9, the Limiting Conditions for Operation for the Instrumentation listed in Table 3.2.6 shall be met.

H. Instrumentation for Safety/Relief Valve Low-Low Set Logic

Whenever the safety/relief valves are required to be operable by Specification 3.6.E, the Limiting Conditions for Operation for the Instrumentation listed in Table 3.2.7 shall be met.

I. Instrumentation for Control Room Habitability Protection

1. Whenever the emergency filtration system is required to be operable by Specification 3.17.B, the Limiting Conditions for Operation for the radiation instrumentation listed in Table 3.2.9 shall be met.

3.2/4.2

Table 3.2.9

Instrumentation for Control Room Habitability Protection

Function	Trip Settings	Total No. of Instrument Channels per Trip System	Minimum No. of Operable or Operating Instrument Channels per Trip System (1)	Minimum No. of Trip Systems	Required Conditions*
Radiation	≤2 mR/hr	1	1	2	A or B

Notes:

(1) An instrument channel may be bypassed for testing or preventative maintenance for up to eight hours.

* Required conditions when minimum conditions for operation are not satisfied.

A) Within 1 hour initiate and maintain operation of the control room emergency filtration system subsystem in the pressurization mode of operation.

B) Within 24 hours reduce reactor water temperature to below 212°F.

Table 4.2.1 - Continued

Minimum Test and Calibration Frequency for Core Cooling,
Rod Block and Isolation Instrumentation

Instrument Channel	Test (3)	Calibration (3)	Sensor Check (3)
SAFEGUARDS BUS VOLTAGE			
1. Degraded Voltage Protection	Once/month	Quarterly	Not applicable
2. Loss of Voltage Protection	Once/month	Once/Operating Cycle	Not applicable
<u>SAFETY/RELIEF VALVE LOW-LOW SET LOGIC</u>			
1. Reactor Scram Sensing	Once/Shutdown (Note 8)	-	-
2. Reactor Pressure - Opening	Once/3 months (Note 5)	Once/Operating Cycle	Once/day
3. Reactor Pressure - Closing	Once/3 months (Note 5)	Once/Operating Cycle	Once/day
4. Discharge Pipe Pressure	Once/3 months (Note 5)	See Table 4.14.1	See Table 4.14.1
5. Inhibit Timer	Once/3 months (Note 5)	Once/Operating Cycle	-
<u>CONTROL ROOM HABITABILITY PROTECTION</u>			
1. Radiation	Monthly (Note 5)	18 months	Daily

Bases Continued:

- 3.2 open and instrumentation drift has caused the nominal 80-psi blowdown range to be reduced to 60 psi. Maximum water leg clearing time has been calculated to be less than 6 seconds for the Monticello design. Inhibit timers are provided for each valve to prevent the valve from being manually opened less than 10 seconds following valve closure. Valve opening is sensed by pressure switches in the valve discharge line. Each valve is provided with two trip, or actuation, systems. Each system is provided with two channels of instrumentation for each of the above described functions. A two-out-of-two-once logic scheme ensures that no single failure will defeat the low-low set function and no single failure will cause spurious operation of a safety/relief valve. Allowable deviations are provided for each specified instrument setpoint. Setpoints within the specified allowable deviations provide assurance that subsequent safety/relief valve actuations are sufficiently spaced to allow for discharge line water leg clearing.

Control room habitability protection instrumentation assures that the control room operators will be adequately protected against the effects of accidental releases of radioactive leakage which may bypass secondary containment following a loss of coolant accident or radioactive releases from a steam line break accident, thus assuring that the Monticello Nuclear Generating Plant can be operated or shutdown safely.

Although the operator will set the setpoints within the trip settings specified in Tables 3.2.1 through 3.2.9, the actual values of the various set points can differ appreciably from the value the operator is attempting to set. The deviations could be caused by inherent instrument error, operator setting error, drift of the set point, etc. Therefore, these deviations have been accounted for in the various transient analyses and the actual trip settings may vary by the following amounts:

3.0 LIMITING CONDITIONS FOR OPERATION

3.17 CONTROL ROOM HABITABILITY

Applicability:

Applies to the control room ventilation system equipment necessary to maintain habitability.

Objectives:

To assure the control room is habitable both under normal and accident conditions.

Specification:

A. Control Room Ventilation System

1. Except as specified in 3.17.A.2 and 3.17.A.3 below, both trains of the control room ventilation system shall be operable, whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F, or during movement of irradiated fuel assemblies in the secondary containment, core alterations or activities having the potential for draining the reactor vessel.
- 2.a With one control room ventilation train inoperable, restore the inoperable train to operable status within 30 days.
- 2.b If 2.a is not met, then be in hot shutdown within the next 12 hours following the 30 days and in cold shutdown within 24 hours following the 12 hours.
- 2.c If 2.a is not met during movement of irradiated fuel assemblies in the secondary containment, core alterations or activities having the potential for draining the reactor vessel then immediately place the operable control room ventilation train in operation or immediately suspend these activities.

3.17/4.17

4.0 SURVEILLANCE REQUIREMENTS

4.17 CONTROL ROOM HABITABILITY

Applicability:

Applies to the periodic testing requirements of systems required to maintain control room habitability.

Objectives:

To verify the operability of equipment related to control room habitability.

Specification:

A. Control Room Ventilation System

1. At least once per shift, check control room temperature.

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3.0 LIMITING CONDITIONS FOR OPERATION

- 3.a With both control room ventilation trains inoperable, restore at least one train to operable status within 24 hours.
- 3.b If 3.a is not met, then be in hot shutdown within the next 12 hours and in cold shutdown within 24 hours following the 12 hours.
- 3.c If 3.a is not met during movement of irradiated fuel assemblies in the secondary containment, core alterations, or activities having the potential for draining the reactor vessel then immediately suspend these activities.

B. Control Room Emergency Filtration System

- 1. Except as specified in 3.17.B.1.a or 3.17.B.1.b below, two control room emergency filtration system filter trains shall be operable whenever irradiated fuel is in the reactor vessel and reactor coolant temperature is greater than 212°F.
 - a. When one control room emergency filtration system filter train is made or found to be inoperable, for any reason, restore the inoperable train to operable status within seven days or be in hot shutdown within the next 12 hours following the seven days and either reduce the reactor coolant temperature to below 212°F or initiate and maintain the operable emergency filtration system filter train in the pressurization mode within the following 24 hours.

4.0 SURVEILLANCE REQUIREMENTS

B. Control Room Emergency Filtration System

- 1. At least once per month, initiate from the control room 1000 cfm ($\pm 10\%$) flow through both trains of the emergency filtration treatment system. The system shall operate for at least 10 hours with the heaters operable.

3.17 Bases

A. Control Room Ventilation System

The Control Room Ventilation System provides air conditioning and heating as required to maintain a suitable environment in the main control room and portions of the first and second floors of the Emergency Filtration Train (EFT) building. The main control room is normally slightly pressurized and it is possible to have 0 to 100% recirculation of conditioned air. The system is designed to maintain a nominal temperature of 78°F dry bulb and 50% nominal relative humidity in the main control room in the summer and a nominal temperature of 72°F in the winter. The Control Room Ventilation System may be isolated from unfiltered external air supply by manual action.

All toxic substances which are stored on site or stored/shipped within a 5 mile radius of the plant have been analyzed for their affect on the control room operators. It has been concluded that the operators will have at least two minutes to don protective breathing apparatus before incapacitation limits are exceeded. For toxic substance which are transported on highways within 5 miles of the plant, it has been determined that the probability of a release from the plant due to incapacitation of the operators caused by a spill is sufficiently low that this scenario may be excluded. Protection for toxic chemicals is provided through operator training.

B. Control Room Emergency Filtration System

The Control Room Emergency Filtration System assures that the control room operators will be adequately protected against the effects of radioactive leakage which may by-pass secondary containment following a loss of coolant accident or radioactive releases from a steam line break accident. The system is designed to isolate and slightly pressurize the control room on a radiation signal in the ventilation air. 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 pressurizing air and prevent clogging of the iodine adsorbers. The charcoal adsorbers are installed to remove any radioiodines from the pressurizing air. The in-place test results should indicate a HEPA filter leakage of less than 1% through DOP testing and a charcoal adsorber leakage of less than 1% through halogenated hydrocarbon testing. The laboratory carbon sample results should indicate a radioactive methyl iodide removal efficiency of a least 98% under test conditions similar to expected accident conditions. System flows should be near their design values. The verification of these performance parameters combined with the qualification testing conducted on new filters and adsorbers provide a high level of assurance that the Emergency Filtration System will perform as predicted in reducing doses to plant personnel below those level stated in Criterion 19 of Appendix A to 10 CFR 50.

Dose calculations have been performed for the Control Room Emergency Filtration System which show that, assuming 90% standby gas treatment system adsorption and filtration efficiency and 90% control room emergency filtration system adsorption and filtration efficiency and radioiodine plateout, whole body and organ doses remain within the NRC guidelines of 5 rem and 30 rem, respectively.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 89 TO FACILITY OPERATING LICENSE NO. DPR-22
NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263

1.0 INTRODUCTION

By letters dated November 30, 1993 and June 30 1994, Northern States Power Company (the licensee) submitted a request for amending Technical Specifications (TS) by deleting the requirements for a chlorine detection system in the following sections of TS: 3.2.I (Instruments for Control Room Habitability Protection), 3.17.A and 4.17.A (Control Room Ventilation System), Tables 3.2.9 (Instrumentation for Control Room Habitability Protection) and 4.2.1 (Minimum Test and Calibration Frequency for Core Cooling, Rod Block and Isolation Instrumentation) and Technical Bases for TS 3.2 (discussion of onsite and offsite toxic chemical hazards), and TS 3.17.A (discussion of control room ventilation). The June 30, 1994, letter only provided documents cited in the amendment application and did not affect the staff's initial no significant hazards determination.

The licensee found that no chlorine is stored on the plant site, and the quantity of chlorine transported within a five mile distance from the plant is either too small to exceed safe concentrations in the control room after its accidental release, or the probability of an accident is below the limit for which the Standard Review Plan (SRP) requires safety analysis to be performed. Based on this finding, the licensee concluded that the chlorine that is either stored or transported in the vicinity of the plant does not pose a safety hazard to the habitability of the control room, and there is no need for having chlorine detection capability at the plant.

2.0 EVALUATION

Chlorine is no longer stored at the plant site. However, it is stored within a five mile radius from the plant in four facilities and is being transported by nearby rail and truck. The quantity of chlorine transported by rail exceeds the Regulatory Guide 1.78 criterion of 30 shipments per year and, therefore, the licensee evaluated the consequences of a postulated accident.

Chlorine is transported within a five mile radius from the plant by the Burlington Northern railroad with its line passing the plant on the opposite side of the Mississippi River with a point of closest approach of two miles. The maximum shipping load was found to be about 90 tons. The licensee has

performed an analysis using conservative assumptions for wind direction, atmospheric dispersion conditions, and taking no credit for intervening structures or topology which would dilute concentration at the control room intake, an elevated control room intake, and spill absorption or dilution in surrounding ground or water. The results of this analysis have indicated that accidental release of chlorine transported by the Burlington Northern railroad will not produce toxic concentrations in the control room for at least two minutes from its detection, giving enough time for the operators to don their protective equipment. The licensee's analysis has been reviewed by the staff and found to be acceptable.

Since the amount of chlorine released and the distance from the plant, used in the analysis of a railroad accident, were higher than in any of the chlorine storage facilities, this analysis constituted a bounding case and no analyses for the individual storage facilities had to be performed.

Chlorine is transported by the trucks in significant quantities on two main highways: Interstate 94, passing one-half mile from the plant, and Highway 10 passing approximately two miles from the plant. Due to lack of information on the types and quantities of chlorine transported by trucks on these highways, the licensee has performed a probabilistic study to assess the likelihood of the accidents which would cause an unacceptable concentration of chlorine in the control room. The study was performed using information on the volume of the traffic carrying hazardous chemicals and the probability of their accidental release. From this study, the probability of toxic gas concentrations leading to incapacitation of the control room operator was determined. Combining it with the probability of core damage due to unattended plant operation, the probability of the corresponding radioactive release and occurrence of potential exposures in excess of the 10 CFR Part 100 guidelines was determined to be 3.78×10^{-8} per year. This is significantly lower than 10^{-7} per year which is the acceptable limit specified in the Standard Review Plan. The staff has verified the assumptions used by the licensee in its analysis and found them to be conservative.

The staff has reviewed the licensee's request for deletion of the chlorine detection system. Based on the results of the review of the licensee's analysis and its probabilistic assessment, the staff concludes that the request is acceptable and deletion of the chlorine detection system would not cause unacceptable safety concerns.

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 amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the amendment involves 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 amendment involves no significant hazards consideration and there has been no public comment on such finding (59 FR 10010). Accordingly, the amendment meets 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 amendment.

5.0 CONCLUSION

The staff 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: August 25, 1994