

April 8, 1986

Docket No. 50-263

Mr. D. M. Musolf
Nuclear Support Services Department
Northern States Power Company
414 Nicollet Mall - 8th Floor
Minneapolis, Minnesota 55401

Dear Mr. Musolf:

SUBJECT: SAFETY/RELIEF VALVE SIMMER MARGIN IMPROVEMENT (TAC 59437)

Re: Monticello Nuclear Generating Plant

The Commission has issued the enclosed Amendment No. 43 to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. This amendment is in response to your application dated June 27, 1985.

The amendment revises the Technical Specifications to implement the requirements of NUREG-0737, Item II.K.3.16, "Improvements to Reduce Challenges and Failures of Safety/Relief Valves". The two changes are: (1) In Section 2.4.B, increase the safety/relief valve set-actuation setpoint from 1108 psig to 1120 psig, (2) In Table 3.2.7, increase the low-low set logic opening and closing setpoints for reactor coolant system pressure by 12 psi. To allow sufficient time to accomplish the safety/relief valve setpoint changes, this amendment will become effective June 1, 1986.

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

Sincerely,

Original signed by

John A. Zwolinski, Director
BWR Project Directorate #1
Division of BWR Licensing

Enclosures:

1. Amendment No. 43 to License No. DPR-22
2. Safety Evaluation

cc w/enclosures:
See next page

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

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Sincerely,

A handwritten signature in black ink, appearing to read "John A. Zwolinski".

John A. Zwolinski, Director
BWR Project Directorate #1
Division of BWR Licensing

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License No. DPR-22
2. Safety Evaluation

cc w/enclosures:
See next page

Mr. D. M. Musolf
Northern States Power Company

Monticello Nuclear Generating Plant

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. 43
License No. DPR-22

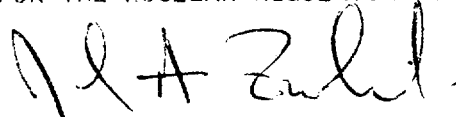
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Northern States Power Company (the licensee) dated June 27, 1985, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules 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 Appendix A as revised through Amendment No. , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective June 1, 1986.

FOR THE NUCLEAR REGULATORY COMMISSION



John A. Zwolinski, Director
BWR Project Directorate #1
Division of BWR Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: April 8, 1986

ATTACHMENT TO LICENSE AMENDMENT NO. 43

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 the captioned amendment number and contain marginal lines indicating the area of change.

REMOVE

21

24

60b

INSERT

21

24

60b

2.0 SAFETY LIMITS

2.2 REACTOR COOLANT SYSTEM

Applicability:

Applies to limits on reactor coolant system pressure.

Objective:

To establish a limit below which the integrity of the reactor coolant system is not threatened due to an overpressure condition.

Specification:

The reactor vessel pressure shall not exceed 1335 psig at any time when irradiated fuel is present in the reactor vessel.

LIMITING SAFETY SYSTEM SETTINGS

2.4 REACTOR COOLANT SYSTEM

Applicability:

Applies to trip settings of the instruments and devices which are provided to prevent the reactor system safety limits from being exceeded.

Objective:

To define the level of the process variables at which automatic protective action is initiated to prevent the safety limits from being exceeded.

Specification:

- A. Reactor Coolant High Pressure Scram shall be \leq 1075 psig.
- B. The self-actuation function of at least seven Reactor Coolant System safety relief valves shall be operable. Valves shall be set as follows:
 - 8 valves at \leq 1120 psig

Bases:

2.4 The settings on the reactor high pressure scram, reactor coolant system safety/relief valves, turbine control valve fast closure scram, and turbine stop valve closure scram have been established to assure never reaching the reactor coolant system pressure safety limit as well as assuring the system pressure does not exceed the range of the fuel cladding integrity safety limit. The APRM neutron flux scram and the turbine bypass system also provide protection for these safety limits. In addition to preventing power operation above 1075 psig, the pressure scram backs up the APRM neutron flux scram for steam line isolation type transients.

The reactor coolant system safety/relief valves assure that the reactor coolant system pressure safety limit is never reached. In compliance with Section III of the ASME Boiler and Pressure Vessel Code, 1965 Edition, the safety/relief valves must be set to open at a pressure no higher than 105 percent of design pressure, and they must limit the reactor pressure to no more than 110 percent of design pressure. The safety/relief valves are sized according to the Code for a condition of MSIV closure while operating at 1670 MWt, followed by no MSIV closure scram but scram from an indirect (high flux) means. With the safety/relief valves set as specified herein, the maximum vessel pressure remains below the 1375 psig ASME Code limit. Only seven of the eight valves are assumed to be operable in this analysis and the valves are assumed to open at 1% above their setpoint with a 0.4 second delay. The upper limit on safety/relief valve setpoint is established by the design pressure of the HPCI and RCIC systems of 1120 psig.

The operator will set the reactor coolant high pressure scram trip setting at 1075 psig or lower. However, the actual setpoint can be as much as 10 psi above the 1075 psig indicated set point due to the deviations discussed in the basis of Specification 3.1. In a like manner, the operator will set the reactor coolant system safety/relief valve initiation trip setting at 1120 psig or lower. However, the actual set point can be as much as 11.2 psi above the 1120 psig indicated set point due to the deviations discussed in the basis of Specification 3.6.

A violation of this specification is assumed to occur only when a device is knowingly set outside of the limiting trip setting, or when a sufficient number of devices have been affected by any means

Amendment No. 30,43

TABLE 3.2.7

Instrumentation for Safety/Relief Valve Low-Low Set Logic

Function	Trip Setting	Min. No. of Operable or Operating Trip Systems	Total No. of Instrument Channels Per Trip System	Min. No. of Operable or Operating Instrument Channels Per Trip System	Required Conditions
Reactor Scram Detection		2(2)	2	2	A or B or C
Reactor Coolant System Pressure for Opening/Closing (1)	1072±3/992±3 psig 1062±3/982±3 psig 1052±3/972±3 psig	2(2)	2	2	A or B or C
Discharge Pipe Pressure Inhibit	50±1 psid (3)	2(2)	2	2	A or B or C
Inhibit Timers	10±1 sec	2(2)	2	2	A or B or C

Amendment No. 30, 43



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 43 TO FACILITY OPERATING LICENSE NO. DPR-22
NORTHERN STATES POWER COMPANY
MONTICELLO NUCLEAR GENERATING PLANT
DOCKET NO. 50-263

1.0 INTRODUCTION

By letter dated June 27, 1985, Northern States Power Company (the licensee) requested Technical Specifications (TS) changes to amend Appendix A of Facility Operating License No. DPR-22. The licensee proposed to increase the safety/relief valve actuation setpoints and low-low set logic setpoints by 12 psi.

2.0 EVALUATION

Monticello Nuclear Generating Plant is equipped with eight Target Rock three stage safety/relief valves (SRV's). Three non-automatic depressurization system SRV's are selected as low-low setpoint logic (LLS) SRV's. The nominal opening/closing setpoints for all SRV's are 1108/1078 psig. The opening/closing setpoints for three LLS SRV's are 1060, 1050, 1040 psig and 980, 970, 960 psig respectively. The proposed changes would increase the nominal opening/closing setpoints for all SRV's to 1120/1090 psig. The three LLS SRV's opening/closing setpoints would be 1072, 1062, 1052 psig and 992, 982, 972 psig, respectively.

General Electric has performed an analysis for the licensee (NEDO-30771, "Safety Relief Valve Simmer Margin Analysis for the Monticello Nuclear Generating Plant") to optimize the simmer margin while maintaining required safety margins for vessel overpressure protection, fuel peak cladding temperature and loads associated with the actuation of SRV's. The study also included the impact of increased valve setpoints on High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) Systems Operation. The study concluded that the SRV setpoint may safely be increased by 12 psi over the Monticello Cycle 11 SRV setpoints. The setpoint increase is limited by the HPCI and RCIC rated design pressure.

The staff has reviewed the proposed request and agrees with the licensee that this increase in safety/relief valve simmer margin will increase valve reliability by reducing the probability of valve leakage and spurious opening during operations. The increase in the

simmer margin is one of the actions recommended by the NRC staff to implement the requirements of NUREG-0737, Item II.K.3.16, "Improvements to Reduce Challenges and Failures of Safety/Relief Valves." An SRV simmer margin is the difference between the SRV set pressure and the reactor pressure vessel operating pressure. The proposed changes indicate no adverse effect on the plant performance or safety margin. The staff, therefore, finds the proposed changes acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 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, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: K. Desai

Dated: April 8, 1986