

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE DPR-22

LICENSE AMENDMENT REQUEST DATED February 12, 1993

Northern States Power Company, a Minnesota corporation, requests authorization for changes to Appendix A of the Monticello Operating License as shown on the attachments labeled Exhibits A, B, and C. Exhibit A describes the proposed changes, describes the reasons for the changes, and contains a Safety Evaluation, a Determination of Significant Hazards Consideration and an Environmental Assessment. Exhibit B contains current Technical Specification pages marked up with the proposed changes. Exhibit C is a copy of the Monticello Technical Specifications incorporating the proposed changes.

This letter contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

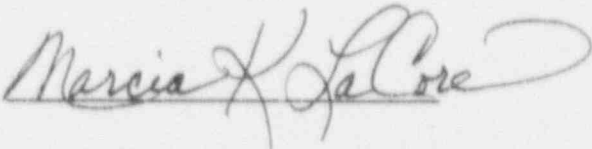
By


Thomas M Parker

Director

Nuclear Licensing

On this 12th day of February, 1993 before me a notary public in and for said County, personally appeared Thomas M Parker, Director, Nuclear Licensing, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true and that it is not interposed for delay.





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Exhibit A

MONTICELLO NUCLEAR GENERATING PLANT

License Amendment Request Dated February 12, 1993

Evaluation of proposed changes to the Technical Specifications
for Operating License DPR-22

Pursuant to 10 CFR Part 50, Section 50.59 and 50.90, the holders of Operating License DPR-22 hereby propose the following changes to the Monticello Technical Specifications:

<u>Page</u>	<u>Section</u>	<u>Proposed Changes</u>
52	Table 3.2.2	<p>Revise Core Spray and Low Pressure Coolant Injection trip function A.1.b.ii to delete the word "and" from the function description (Reactor Low Pressure Permissive Bypass Timer) and to refer to Required Condition "B" in lieu of Required Condition "C".</p> <p>Also, correct the spelling of the word "Channels" in the heading for the second column from the right.</p>
53	Table 3.2.2	<p>Revise HPCI System trip functions B.1 (High Drywell Pressure) and B.2 (Low-Low Reactor Water Level) to refer to Required Condition "A" in lieu of "B".</p> <p>Also, revise Automatic Depressurization System trip functions C.1 (Low-Low Reactor Water Level), C.2 (Auto Blowdown Timer), and C.3 (Low Pressure Core Cooling Pumps Discharge Pressure Interlock) to refer to Required Condition "B" in lieu of "C".</p>
54	Table 3.2.2	<p>Revise Diesel Generator trip functions D.2 (Low-Low Reactor Water Level) and D.3 (High Drywell Pressure) to refer to Required Condition "C" in lieu of "D".</p>
55	Table 3.2.2	<p>Delete the existing Required Condition "B", and re-identify remaining Required Conditions "C" and "D" as "B" and "C", respectively.</p>
60d	Table 3.2.8	<p>Revise Required Condition "B" to refer to Specification 3.5.D in lieu of 3.5.E.2.</p> <p>Also, delete redundant "status" from the description of Required Condition "C." near bottom of the page.</p>

- 101 4.5.A.1 Revise the minimum required flow rate of the Core Spray Pumps upwards from 2,700 gpm to 2,800 gpm.
- 107 3.5.F.1.a.2 The specification currently reads:
- "The Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) will be changed as noted in Table 3.11.1."
- Revise this specification to read:
- "The Maximum Average Planar Linear Heat Generation Rate (MAPLHGR) will be changed as noted in Table 1 of the Core Operating Limit Report."
- 110 3.5/4.5 Bases Part A The second sentence of the second paragraph of the ECCS Bases currently reads:
- "The Core Spray pump is designed to deliver greater than or equal to 3,020 gpm (safety analysis assumed 2700 gpm) against a system head corresponding to a reactor pressure 130 psi greater than containment pressure."
- Revise the above sentence to read:
- "The Core Spray pump is designed to deliver greater than or equal to 3,020 gpm (the SAFER/GESTR-LOCA safety analysis assumed a Core Spray pump flow of 2,800 gpm, or 2,700 gpm flow into the core + 100 gpm to account for ECCS bypass leakage) against a system head corresponding to a reactor pressure 130 psi greater than containment pressure."
- Also, in the fifth paragraph on this page, reference Specification 3.5.A.3 in lieu of 3.5.A.2.
- 113 3.5/4.5 Bases Part E Revise the last paragraph of this page to refer to Specification 3.5.E.2 in lieu of 3.5.E.4.
- 127 3.6.E.1 The specification currently reads:
- "E. Safety/Relief Valves
1. During power operating conditions and whenever reactor coolant pressure is greater than 110 psig and temperature is greater than 345°F:

- a. The safety valve function (self-actuation) of seven safety/relief valves shall be operable.
- b. The solenoid activated relief function (Automatic Pressure Relief) shall be operable as required by Specification 3.5.E.
- c. The Low-Low Set Function for three non-Automatic Pressure Relief Valves shall be operable as required by Specification 3.2.H."

Revise this specification to read as follows:

"E. Safety/Relief Valves

- 1. During Operating Conditions and whenever reactor coolant pressure is less than 100 psig and temperature is greater than 345°F, the safety valve function (self actuation) of seven safety/relief valves shall be operable (Note: Low-Low Set and ADS requirements are located in Specifications 3.2.H and 3.5.A, respectively)."

3.6.E.2 Revise this specification to refer to Specification 3.6.E.1 in lieu of 3.6.E.1.a.

151 3.6/4.6 Bases The first paragraph on this page currently reads:

"The safety/relief valves have two functions; i.e. power relief or self-actuated by high pressure. The solenoid actuated function (Automatic Pressure Relief) in which external instrumentation signals of coincident high drywell pressure and low-low water level initiate opening of the valves. This function is discussed in Specification 3.5.E. In addition, the valves can be operated manually."

Revise this paragraph to read:

"The safety/relief valves have two functions; 1) over pressure relief (self-actuated by high pressure), and 2) Depressurization/Pressure

Control (using air actuators to open the valves via ADS, Low-Low Set system, or manual operation). The Low-Low Set and ADS functions are discussed further in Sections 3.2 and 3.5."

156 3.7.A.1 Revise this specification to refer to Specification 3.5.E.2 in lieu of 3.5.G.4.

Reason for Change:

The portion of the change related to increasing the required Core Spray Pump flow from 2,700 gpm to 2,800 gpm is intended to account for the flow losses (bypass leakage paths) inherent to the Emergency Core Cooling Systems (ECCS) design. Increasing the required flow rate for the Core Spray Pumps will assure that the total flow entering the core (ECCS pump flow minus bypass leakage) during a Loss of Coolant Accident (LOCA) is consistent with the value assumed in the Monticello SAFER/GESTR-LOCA Analysis.

The changes to the 3.6/4.6 Bases discussion on page 151 are intended to clarify and correct existing statements that are both confusing and misleading. The current wording states, incorrectly, that coincident high drywell pressure and low-low water level signals initiate automatic actuation of the safety relief valves. This is no longer true because of a modification performed in response to NUREG 0737, Item II.K.3.18 (Reference: License Amendment No. 62 dated March 31, 1989). The correct discussion of this function is provided in Section 3.2 of the Technical Specifications. The proposed change will address this discrepancy and reference the proper information.

Similarly, the changes to Specification 3.6.E are intended to clarify the intent of the specification with respect to Automatic Depressurization System (ADS) and Low-Low Set system requirements. As presently written, Specifications 3.2.H, 3.5.A and 3.6.E cross reference each other in a manner that could lead to misinterpretation of the governing requirements for these systems. The language of the proposed change is intended to alleviate this concern.

The remaining changes are editorial in nature and are intended primarily to correct branching errors that occurred in previous License Amendments. Most of these errors resulted from License Amendment 79 (SAFER/GESTR), dated April 9, 1991, in which Section 3.5/4.5 (Core and Containment Cooling Systems) was substantially rewritten and reorganized. Several specifications were either deleted or re-numbered at that time and related changes to associated cross-references were missed.

Safety Evaluation:

1. Increase in Core Spray Pump Required Flow Rate:

Technical Specification 4.5.A.1 currently requires that the Core Spray

Pumps develop a flow rate of 2,700 gpm against a system head corresponding to a reactor pressure of 130 psi greater than the containment pressure. Technical Specification 4.5.A.2 requires that the Low Pressure Coolant Injection (LPCI) pumps develop a flow rate of 3,870 gpm, corresponding to two pumps delivering 7,740 gpm, at a reactor pressure of 20 psi greater than containment pressure. The SAFER/GESTR-LOCA analysis prepared for Monticello by General Electric incorrectly utilized the above flow rates to represent actual flow into the core.

Due to the design of the Core Spray and LPCI Systems, there are minor flow losses (bypass leakage paths) that cause the actual flow rate into the core to be slightly less than the measured discharge flow rate of the pumps. The Core Spray System is assumed to have 20 gpm leakage from a 1/4 inch vent hole in the T-box which is located between the inner reactor vessel wall and the core shroud. The LPCI system is assumed to have 50 gpm leakage from slip joints on the jet pump assemblies. These flow diversions are treated as leakage paths because the associated coolant goes into the annulus region of the vessel and would flow out the postulated Design Basis Loss of Coolant Accident (DBA-LOCA) Recirculation System suction line break.

An evaluation was performed (Reference: Nonconforming Item Report 92-037) which confirmed that the actual flow rates for individual ECCS pumps minus assumed leakage was adequate to meet the flow rates assumed in the SAFER/GESTR-LOCA analysis, therefore there were no immediate operability concerns. However, the discrepancy between the flow rates required by the Technical Specifications and the values assumed in the SAFER/GESTR-LOCA analysis remains. To resolve this issue, we propose to increase the required Core Spray flow rate by 100 gpm (20 gpm to account for Core Spray leakage + 50 gpm to account for LPCI leakage + 30 gpm for margin) to account for all of the assumed ECCS bypass leakage paths. The LPCI flow rate currently required by the Technical Specification (3,870 gpm per pump/ 7,740 gpm total) would remain unchanged.

This issue has been discussed with General Electric, who performed the Monticello SAFER/GESTR-LOCA analysis. General Electric has concluded that with respect to the analysis, it is of no significance whether the assumed 70 gpm bypass leakage (increased to 100 gpm to provide 30 gpm margin) is accounted for by increasing Core Spray flow, LPCI flow, or both. However, when the trade-off between increasing Core Spray or LPCI flow is considered, increased Core Spray flow is preferred for the following reasons:

- a. In addition to replenishing vessel water inventory lost during the DBA-LOCA, Core Spray flow (which is injected into the vessel above the core) is more effective in collapsing any steam bubble that might form in the vessel.
- b. The Core Spray pumps deliver flow to the reactor vessel at higher reactor pressures than the Residual Heat Removal (RHR) pumps operating in the LPCI mode, which is beneficial in mitigating a postulated DBA-LOCA.

An additional factor in our decision to account for all ECCS assumed bypass leakage by increasing Core Spray flow involves the relative capacities of the Core Spray and RHR pumps. Each of the four RHR pumps (which provide LPCI flow) is currently capable of consistently meeting the existing Technical Specification flow rate requirement of 3,870 gpm. A review of recent surveillance test results has confirmed that the pumps are also capable of meeting the slightly higher flow rate assumed by the SAFER/GESTR-LOCA analysis (3,895 gpm, which equates to an additional 25 gpm per operating pump assuming only two pumps are running, to account for the total LPCI bypass leakage of 50 gpm). However, the higher value (3,895 gpm) is very near the upper limit of RHR pump capacity, and there is insufficient margin remaining to ensure the pumps would consistently achieve this higher flow in the future.

Conversely, Core Spray pump performance is such that the minimum required flow could be increased by 100 gpm to 2,800 gpm without difficulty. The current test criteria for the Core Spray pumps conservatively specifies an acceptance criteria of 3,020 gpm against a system head corresponding to 130 psi greater than containment pressure. Thus, the current test criteria provides a margin of more than 200 gpm over the proposed new Technical Specification criteria.

The combination of ECCS pumps available for each single failure evaluated for a DBA-LOCA by the SAFER/GESTR-LOCA analysis includes a Core Spray pump whenever two LPCI (RHR) pumps are available. Therefore, a Core Spray pump would always be available to provide the additional flow necessary to offset the assumed LPCI bypass leakage.

As discussed above, the proposed change will adequately resolve the discrepancy between the current Technical Specification Emergency Core Cooling Systems pump flow rates and the flow into the core assumed by the SAFER/GESTR-LOCA analysis. The change is primarily administrative and has no impact on plant safety, since the basic assumptions supporting the SAFER/GESTR-LOCA analysis, and therefore the conclusions of the analysis, remain unchanged.

2. Editorial Changes to Correct Branching Errors, Cross Reference Errors, and Clarify/Correct Bases Information:

The changes to the 3.6/4.6 Bases discussion should have been included as part of License Amendment No. 62, dated March 31, 1989. Amendment No. 62 reflected modifications to the Automatic Depressurization System logic that, among other things, removed the High Drywell Pressure interlock in response to NUREG-0737 Item II.K.3.18. Other portions of Technical Specifications affected by the modification were updated appropriately, but the necessary changes to page 151 were missed. Safety considerations associated with the Automatic Depressurization System logic change were fully addressed at the time Amendment No. 62 was processed and the proposed correction does not present any new safety questions or concerns. The proposed change is necessary to ensure the 3.6/4.6 Bases discussion is consistent with the intent of the remainder of the Technical Specifications.

The remaining changes are editorial in nature and do not change the intent of the existing Technical Specifications. Most of these changes serve to correct internal branching and cross reference errors that occurred during previous license amendments. The remaining changes clarify, but do not change, the intent of existing specifications. These changes have no impact on plant safety.

Determination of Significant Hazards Consideration:

This proposed change to the Operating License has been evaluated to determine if it constitutes a significant hazards consideration as required by 10 CFR Part 50, Section 50.91 using the standards provided in Section 50.92. This analysis is provided below:

- a. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Increasing the required Core Spray pump flow rate to 2,800 gpm will make the Technical Specification consistent with the SAFER/GESTR-LOCA analysis. The change is in the conservative direction (increased ECCS flow) and will not increase the probability or consequences of a DBA-LOCA or any other accident previously analyzed.

The remaining changes proposed are editorial or administrative in nature and have no impact on the probability or consequences of any accident previously evaluated.

- b. The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed.

The proposed changes, including the revised Core Spray pump flow rates and the 3.6/4.6 Bases changes, are primarily editorial or administrative in nature. No safety-related equipment, safety function, or plant operations will be altered as a result of the proposed changes. Therefore, the proposed amendment does not in any way create the possibility of a new or different kind of accident from any accident previously evaluated.

- c. The proposed amendment will not involve a significant reduction in the margin of safety.

The proposed amendment will not reduce the margin of safety because the Core Spray pump flow is being conservatively increased so that total ECCS pump flow into the core is consistent with that assumed by the SAFER/GESTR-LOCA analysis. The remaining changes are either editorial in nature or are based on previously reviewed and approved Technical Specifications and have no impact on plant safety.

Based on the evaluation described above, and pursuant to 10 CFR Part 50, Section 50.91, Northern States Power Company has determined that operation of the Monticello Nuclear Generating Plant in accordance with the proposed

license amendment request does not involve any significant hazards considerations as defined by NRC regulations in 10 CFR Part 50, Section 50.92.

Environmental Assessment:

Northern States Power has evaluated the proposed changes and determined that:

1. The changes do not involve a significant hazards consideration,
2. The changes do not involve a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or
3. The changes do not involve a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed changes meet the eligibility criterion for categorical exclusion set forth in 10 CFR Part 51 Section 51.22(c)(9). Therefore, pursuant to 10 CFR Part 51 Section 51.22(b), an environmental assessment of the proposed changes is not required.