

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT

DOCKET Nos. 50-282
50-306

REQUEST FOR AMENDMENT TO
OPERATING LICENSES DPR-42 & DPR-60

LICENSE AMENDMENT REQUEST DATED February 6, 1997
Amendment of Safety Injection Pump Low Temperature Operations

Northern States Power Company, a Minnesota corporation, requests authorization for changes to the Prairie Island Operating License, Appendix as shown in the attachments labeled Exhibits A, B, and C. Exhibit A describes the proposed changes, reasons for the changes, and the supporting safety evaluation and significant hazards determination. Exhibit B contains current Prairie Island Technical Specification pages marked up to show the proposed changes. Exhibit C contains the revised Technical Specification pages incorporating the proposed changes.

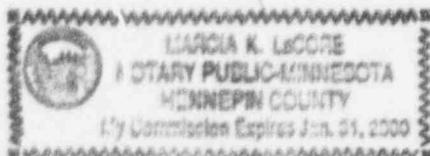
This letter and its attachments contain no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By Joel P. Sorensen
Joel P. Sorensen
Plant Manager
Prairie Island Nuclear Generating Plant

On this 6th day of February 1997 before me a notary public in and for said County, personally appeared, Joel P. Sorensen, Plant Manager, Prairie Island Nuclear Generating Plant, 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.

Marcia K. Lore



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Amendment of Safety Injection Pump Low Temperature Operations

EXHIBIT A

Description of the Proposed Changes, The Reasons for
Requesting the Changes, and the Supporting Safety
Evaluation/Significant Hazards Determination

Pursuant to 10 CFR Part 50, Sections 50.59 and 50.90, the holders of Operating Licenses DPR-42 and DPR-60 hereby propose the following changes to the Facility Operating Licenses and Appendix A, Technical Specifications:

BACKGROUND

This license amendment request proposes to revise Prairie Island Technical Specifications 3.3.A.3 and 3.3.A.4 which prescribe specific conditions whereby the safety injection pump control switches may be moved from the "pullout" position when the reactor coolant system temperature is low (less than 310 °F and 200 °F) and prescribe specific valves for isolation of the safety injection system from the reactor coolant system. Changes to TS.3.3.A.1.c and Bases 3.3 are also proposed in support of the proposed changes to TS.3.3.A.3 and TS.3.3.A.4.

Technical Specifications 3.3.A.3 and 3.3.A.4 allow moving the pump control switch from pullout and running the pumps for performance of the integrated safety injection test and to maintain reactor coolant system inventory. Under both of these situations the reactor coolant system is maintained in a configuration which prevents a low temperature overpressurization event from occurring. If not properly controlled, running the safety injection pump(s) with the reactor coolant system at low temperatures could potentially result in low temperature overpressurization. Safety injection pump operation is allowed by the Technical Specifications for performance of the integrated safety injection test, however, this precludes performance of other system testing and evolutions. These other system tests and evolutions are required by ASME Section XI, and other Technical Specifications.

Technical Specification 3.3.A.3(a) requires the safety injection pump discharge valves to be shut if the safety injection pumps are operated at low reactor coolant system temperatures. The purpose of this requirement is to prevent safety injection mass input into the reactor coolant system which potentially could cause a low temperature overpressurization event. This specification is unnecessarily prescriptive, in that other safety injection system valves can also be used to achieve the purpose of isolating the reactor coolant system from the safety injection system. Literal compliance with the

specification as written prevents completion of all testing of the safety injection system as required by other technical specifications.

This license amendment request proposes to amend the Technical Specifications to allow other safety injection pump testing and evolutions during these shutdown conditions provided similar control for reactor coolant system conditions are in place to provide low temperature overpressurization protection. This license amendment also proposes to allow other valves in the safety injection system to be used to isolate the pumps from the reactor coolant system.

PROPOSED CHANGES AND REASONS FOR CHANGES

The proposed changes to Prairie Island Operating License Appendix A, Technical Specifications, are described below, and the specific wording changes are shown in Exhibits B and C.

1. Technical Specification 3.3.A, Safety Injection and Residual Heat Removal Systems, Paragraph 1.c: Delete "control switches in the control room" and revise as required to maintain sentence flow.

Justification: This change supports the changes proposed for paragraph 3.3.A.3 and 3.3.A.4 where the pump switch position requirements are also proposed to be deleted.

2. Technical Specification 3.3.A, Safety Injection and Residual Heat Removal Systems, Paragraph 3: Delete "control switch in the control room", "in pullout", "while conducting the integrated safety injection test", and "discharge valves are". Insert "incapable of injecting into the RCS", "one or", "isolation valve between" and "and the RCS is".

Justification: The underlying objective of this specification is to protect the reactor coolant system from low temperature overpressurization due to mass input from the safety injection system. The changes proposed to this specification will continue to meet this objective by requiring a safety injection pump to be incapable of injecting into the reactor coolant system or implementing other requirements which prevent RCS overpressurization. The specific means of making the safety injection pump incapable of injecting need not be specified. This change will provide the plant with the ability to perform other required system and component tests and evolutions in addition to the integrated safety injection test.

The current Technical Specification bases are too restrictive in that they state the safety injection pump discharge valves are shut to prevent injection into the reactor coolant system. Use of the injection valves in lieu of the manual safety

injection pump discharge valves allows pressurizing the piping upstream of the valves for required ASME Section XI inservice inspections. As stated in the proposed Bases, these conditions would be under strict administrative controls to assure that overpressurization would not occur.

3. Technical Specification 3.3.A, Safety Injection and Residual Heat Removal Systems, Paragraph 4: Delete "control switch in the control room" and "in pullout". Insert "incapable of injecting into the RCS" and revise as required to maintain sentence flow.

Justification: The considerations presented for TS.3.3.A.3 also apply to the proposed changes for this paragraph. Furthermore, the current technical specifications are too restrictive in that the current wording does not allow, with the exception of the integrated safety injection test, for operating a safety injection pump when the reactor coolant system is less than 200 °F. There are other tests and evolutions, required by ASME and other Technical Specifications, which require operation of a safety injection pump when the reactor coolant system is less than 200 °F. Adequate protection is provided to prevent an overpressurization event when running a safety injection pump by either condition (a) or (b) of TS.3.3.A.3.

4. Technical Specification Bases 3.3, Engineered Safety Features: The discussion pertaining to control of safety injection pump control switches has been changed to reflect the proposed amendments to the Technical Specifications. In addition the Bases were clarified indicate that the valves used to isolate the safety injection pump flow from the reactor coolant system can be any valve in the flow path between the pump discharge and the reactor coolant system. Follow-on Bases pages are included to show the repagination.

Justification: The current technical specifications are too restrictive in that the current wording does not allow for operating a safety injection pump when the reactor coolant system is less than 200 °F other than for the integrated safety injection test. There are other tests and evolutions, required by ASME and other Technical Specifications, which require operation of a safety injection pump when the reactor coolant system is less than 200 °F. Adequate protection is provided in the technical specification to prevent a low temperature overpressurization event when running a safety injection pump.

Also guidance is provided on methods for assuring the safety injection pumps are "incapable of injecting" into the RCS. Three examples are supplied although there may be other acceptable means.

The current Technical Specification bases are too restrictive in that they state the safety injection pump discharge valves are shut to prevent injection into the reactor coolant system. As discussed above, other system valves can also be

used to isolate the reactor coolant system from the safety injection system. These other valves would also be under administrative controls and thus will afford the same degree of protection to the reactor coolant system.

SAFETY EVALUATION

The technical specifications place restrictions on reactor coolant system conditions for operation of a safety injection pump during low temperature operations. These restrictions are invoked to preclude a mass input low temperature overpressurization event from occurring.

The low temperature mass input event is postulated to occur due to inadvertently injecting water into a water solid reactor coolant system. During the integrated safety injection test (currently allowed by Technical Specifications), this is precluded from occurring by ensuring that the reactor coolant system would not be water solid (i.e., head removed or pressurizer bubble with system valves closed). With the head removed, it is not possible to have a water solid reactor coolant system. With a pressurizer bubble (steam or gas), the injection of water could eventually cause the reactor coolant system to be in a water solid condition. Thus, with a pressurizer bubble, water injection is precluded by the requirement to maintain a valve closed between the discharge of the pump and the reactor coolant system.

There are instances, other than the integrated safety injection test or maintenance of reactor coolant system inventory, which require moving the safety injection pump control switch from the pullout position with the reactor coolant system less than 200 °F. For example, the technical specifications and customary maintenance practices require safety injection pump tests, safety injection system flow tests, pump breaker tests and water addition to the ECCS accumulators while the reactor coolant system is at low temperatures. This proposed technical specification revision would allow performance of these tests and evolutions with provisions that would preclude a mass input low temperature overpressurization of the reactor coolant system due to operation of a safety injection pump.

As stated in the bases for the Technical Specifications, these plant conditions (pressurizer bubble with isolation valve closed or vessel head removed) assure that an overpressurization event cannot occur during the integrated safety injection test. Thus, these conditions also provide adequate protection against an inadvertent overpressurization during other safety injection pump tests and evolutions.

Therefore, the health and safety of the public will not be adversely affected by these proposed Technical Specification changes.

DETERMINATION OF SIGNIFICANT HAZARDS CONSIDERATIONS

The proposed changes to the Operating License have been evaluated to determine whether they constitute 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:

1. The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.
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Operation of the Prairie Island plant in accordance with the proposed changes does not involve a significant increase in the probability or consequences of an accident previously evaluated. None of the proposed changes involve a physical modification to the plant.

These specifications are provided in the Prairie Island Technical Specifications to prevent a low temperature overpressurization of the reactor coolant system. These proposed changes do not change the consequences of this event since no physical changes to the safety injection system or reactor coolant system are involved.

These changes allow performance of safety injection pump testing and evolutions (required by ASME and other Technical Specifications) during reactor coolant system low temperature conditions. Controls are in place to ensure that these system tests or evolutions can only be performed with the reactor coolant system in specific conditions which preclude a low temperature overpressurization event. The probability of an inadvertent pump start is not increased by this activity.

Current technical specifications allow safety injection pump operation with a steam or gas bubble in the pressurizer and the pump discharge valves closed. This amendment would allow other system valves to be used, under strict administrative controls as required in the Bases, to perform this isolation function. Thus, there would be no increase in the probability of a valve operator failure causing an inadvertent water injection to the reactor coolant system.

With these controls in place for reactor coolant system conditions during operation of a safety injection pump, the probability of an inadvertent over pressure condition is not increased. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because the proposed changes, in themselves, do not introduce a new mode of plant operation, surveillance requirement or involve a physical modification to the plant.

The proposed changes allow performance of required system testing and evolutions while reactor coolant system conditions are maintained which preclude a potential low temperature overpressurization event. These conditions are functionally the same as those currently allowed for operation of the safety injection system when performing the integrated safety injection test. Thus, this change does not create the possibility of a new kind of accident.

The proposed changes do not alter the design, function, or operation of any plant components and therefore, no new accident scenarios are created.

Therefore, the possibility of a new or different kind of accident from any accident previously evaluated would not be created by these amendments.

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

The license amendment request allows performance of required system testing and evolutions while reactor coolant system conditions are maintained which preclude a potential low temperature overpressurization event. These conditions are functionally the same as those currently allowed for operation of the safety injection system when performing the integrated safety injection test.

Therefore, these amendments do not involve a significant reduction in the margin of 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 Prairie Island Nuclear Generating Plant in accordance with the proposed license amendment request does not involve a significant hazards considerations as defined by Nuclear Regulatory Commission regulations in 10 CFR part 50, Section 50.92.

ENVIRONMENTAL ASSESSMENT

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

1. The changes do not involve a significant hazards consideration, or

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.