

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

DOCKET NO. 50-282
50-306

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

EMERGENCY LICENSE AMENDMENT REQUEST DATED August 3, 1992

Northern States Power Company, a Minnesota corporation, requests authorization for changes to Appendix A of the Prairie Island Operating License as shown on the attachments labeled Exhibits A, B, and C. Exhibit A describes the proposed changes, reasons for the changes, and a significant hazards evaluation. Exhibits B and C are copies of the Prairie Island Technical Specifications incorporating the proposed changes.

This letter contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

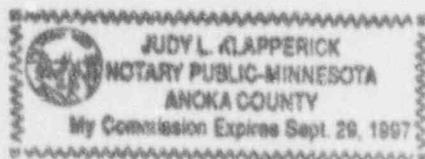
By

Dave M Musolf

Dave M Musolf
General Manager
Nuclear Support Group

On this 3rd day of August 1992 before me a notary public in and for said County, personally appeared Dave M Musolf, General Manager, Nuclear Support Group, 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.

Judy L. Klapperick



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Exhibit A

Prairie Island Nuclear Generating Plant Emergency License Amendment Request Dated August 3, 1992

Evaluation of Proposed Changes to the Technical Specifications Appendix A of Operating License DPR-42 and DPR-60

Pursuant to 10 CFR Part 50, Sections 50.59, 50.70 and 50.91(a)(5) the holders of Operating Licenses DPR-42 and DPR-60 hereby propose the following changes to Appendix A, Technical Specifications:

Background

Section 4.6.A.3.b.1 of the Prairie Island Technical Specifications requires verification that the simulation of a loss of offsite power in conjunction with a safety injection signal will result in the de-energization of the emergency buses and load shedding from the emergency buses. The bases for Section 4.6 state that this test will demonstrate that the emergency power system and the control systems for the engineered safeguards equipment will function automatically in the event of loss of all other sources of a-c power, and that the diesel generators will start automatically in the event of a loss-of-coolant accident. The bases further state that this test will demonstrate proper tripping of motor feeder breakers, main supply and tie breakers on the affected bus, and sequential starting of essential equipment, as well as the operability of the diesel generators.

As a result of a detailed examination of the Emergency Power System Technical Specifications conducted during the Operating Experience Assessments of Kewaunee Licensee Event Report 92-011 and NRC Information Notice 92-40, "Inadequate Testing of Emergency Bus Undervoltage Logic Circuitry", it was identified on July 27, 1992 that a portion of the surveillance testing described in the bases for Section 4.6.A.3.b.1 had not been completed within the required time frame.

Previously, the integrated safety injection test has been used to fulfill the requirements of Technical Specification 4.6.A.3.b.1 during each refueling outage. The integrated SI test simulates a loss of off-site power by directing an operator to manually open the supply breaker to the safeguards bus. This method of tripping the source breakers from the safeguards buses was used in the pre-operational test of the diesel generators and during each subsequent integrated safety injection test.

However, the integrated safety injection test does not demonstrate the full capability of the undervoltage trip feature to automatically de-energize the safeguards buses upon a loss of power. The testing performed during the integrated SI test does not demonstrate proper tripping of the main supply and tie breakers on the affected 4160V safeguards bus. All other requirements of 4.6.A.3.b.1 are fulfilled by the integrated safety injection test.

Electrical preventive maintenance is performed on one of the two 4160 V safeguards buses during each refueling outage, while the refueling cavity is flooded. Prior to restoring the bus, a separate surveillance procedure is performed to functionally check the voltage restoration scheme. During this

test, the tripping of the source breakers (main supply and tie breakers) is verified during a simulated bus undervoltage. This surveillance test has been performed as part of post maintenance testing prior to bus restoration and was not intended to meet Technical Specification requirements (as interpreted at the time). However, this test provides sufficient overlap with the integrated safety injection test to meet the Technical Specification requirements in Section 4.6.A.3.b.1 and its bases. This test is performed every other refueling outage, rather than the 18 month frequency in TS 4.6.A.3.b.1. Testing on Unit 1 4160 V bus 16 was last performed on February 20, 1990. Testing on Unit 2 4160 V bus 26 was last performed on September 20, 1990.

As a result of not completing all of the individual surveillance test requirements specified in Section 4.6.A.3.b.1, and the associated bases for Section 4.6 within the stated frequency, Unit 1 4160V safeguards bus 16 was declared inoperable at 1600 on July 27, 1992. The bus was determined to be inoperable per guidance provided in the Prairie Island Technical Specification definition of operability. Unit 2 4160V bus 26 will exceed its 18 month surveillance interval plus 25% on August 5, 1992. Northern States Power requested a NRR Waiver of Compliance from the 4160V safeguards bus surveillance test requirements of Prairie Island Technical Specification Section 4.6.A.3.b.1 on July 27, 1992. That request for Waiver of Compliance requested a delay in the completion of the surveillance test requirements and operability verification for 4160V safeguards buses as specified in Specification 4.6.A.3.b.1 and the basis for Section 4.6 until an Emergency License Amendment could be submitted and approved. An NRR Waiver of Compliance was verbally issued by the NRC Staff at 2025 on July 27, 1992.

This Emergency License Amendment Request is requesting authorization to delay the performance of the incomplete portion of the surveillance testing on buses 16 and 26 until completion of the electrical system upgrade modifications of the station blackout project during the two unit outage scheduled to begin in October 1992.

Proposed Changes and Reasons for Change

A footnote to Technical Specification Section 4.6.A.3.b.1 is being added to page TS.4.6-2 as shown in Exhibits B and C. The footnote states that demonstration of the proper tripping of the main supply and tie breakers on the emergency buses may be delayed, on a one time basis, until the Unit 1 and 2 outages scheduled for the Fall of 1992. This proposed change will allow a delay in the performance of the incomplete portion of the surveillance testing on buses 16 and 26 until completion of the electrical system upgrade modifications of the station blackout project during the two unit outage scheduled to begin in October 1992.

When in place, the proposed changes will extend, on a one time basis, the surveillance frequency for the subject testing on 4160V Buses 16 and 26 to 34 months and 27 months respectively. With these surveillance frequency extensions in place, 4160V buses 16 and 26 will be considered fully operable until completion of the testing required by Specification 4.6.A.3.b.1 during the Fall 1992 outages.

The refueling outage post-maintenance testing procedure that includes verification of the proper tripping of the main supply and tie breakers, requires the affected safeguards bus to be de-energized and all motor feeder breakers racked out. While alternate forms of testing might be developed for completion of this testing during power operation, any such test procedure would involve some amount of risk. At this time the high degree of confidence in the operability and reliability of the voltage restoration scheme does not justify invoking the additional risk of such testing at power.

Likewise, shutting down both Prairie Island units to facilitate safe performance of the testing will incur additional risk to plant safety which is not justified by the small risk presented by the incomplete testing of 4160V buses 16 and 26.

Because completion of this testing is not deemed to be prudent at this time, this Emergency License Amendment Request is required to avoid the shutdown of both Prairie Island units because of the failure to perform a portion of the testing required by Specification 4.6.A.3.b.1.

Due to the nature of this event, it was not possible to foresee its occurrence and take measures to avoid it. Therefore, it was not possible to avoid the submittal of this request for an Emergency License Amendment Request.

A minor editorial change has also been incorporated into page TS.4.6-2, the word "conduotec" is being corrected to "conducted" in paragraph 4.6.A.3.b.2.

Safety Evaluation

Portions of the load reject/voltage restoration scheme are tested frequently. The undervoltage and degraded voltage relay setpoint calibration is verified on a monthly basis. Also on a monthly basis, under a separate surveillance, the emergency diesel generators are started, synchronized to the safeguards bus and the load sequencing portion of the scheme is tested. This normal monthly surveillance testing verifies operability of the majority of the load reject/voltage restoration scheme components.

As stated above, electrical preventive maintenance is performed on one of the two 4160 V safeguards buses during each refueling outage. Prior to restoring the bus, a separate surveillance procedure is performed to functionally check the voltage restoration scheme. During this test, the tripping of the source breakers (main supply and tie breakers) is verified during a bus undervoltage. This preventative maintenance program has been in place since 1977. Based on the every other refueling outage schedule, verification of the tripping of the 4160V bus source breakers has been performed on a frequency ranging from approximately 24 months early in plant life to as much as 34 months for the most recent cycles.

No problems affecting operability have been identified with the voltage restoration logic during the performance of the preventative maintenance described above. This testing and maintenance demonstrates the reliability of the voltage restoration logic and the relays in question and provides a high degree of assurance that the relays are operable and will remain operable until they can be tested during the two unit outage scheduled to begin in October 1992.

The relay used to trip the 4160V safeguards bus main supply and tie breakers during voltage restoration is a Clark Control Co. Series 4U relay. This type of relay is used extensively throughout the Prairie Island units. No problems with Series 4U relays were identified by a search of the Prairie Island surveillance records, machinery history, significant operating events and reportable events.

A search of the Nuclear Plant Reliability Data System (NPRDS) data base has been performed to assess the reliability of the Series 4U relays. The results of that search indicates that the reliability of the Series 4U relays is much better than the average reliability for relays throughout the industry. The failure rate for the Series 4U relays, as reported by NPRDS for the period of January 1975 through December 1991, is $1.26E-07$ failures per component hour. The failure rate reported by NPRDS during the same period for all relays in the industry is $5.50E-07$ failures per component hour.

This history of high reliability for the Series 4U relays throughout the industry and at Prairie Island provides additional assurance that the Series 4U relays in the bus 16 and 26 voltage restoration schemes are presently operable and will remain operable throughout the requested surveillance interval extension.

It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed at its required frequency. The opposite is in fact the case; the vast majority of surveillances demonstrate that systems or components in fact are operable. When a surveillance has not been completed, it is primarily a question of operability that has not been verified by the performance of the required surveillance.

Assuming that the incomplete surveillance testing results in inoperable voltage restoration logic, only 4160V buses 16 and 26 would be affected. 4160V buses 15 and 25 are still within the required surveillance test interval and remain operable. Therefore, consistent with the plant accident analysis, at least one train of safeguards components would remain operable on each unit.

Even though there is a high degree of confidence that the voltage restoration logic for buses 16 and 26 will function as designed, the following compensatory actions are or will be taken, on an interim basis, to provide additional assurance that the 4160V voltage restoration scheme will remain capable of responding to any plant transient:

1. The relays associated with the 4160V safeguards bus undervoltage restoration scheme will be visually inspected monthly.
2. If either Unit 1 or Unit 2 should be taken to the cold shutdown condition, the incomplete portions of the testing required by Specification 4.6.A.3.b.1 will be completed on the affected unit prior to returning that unit to power operation.

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.

Assuming that incomplete surveillance testing results in inoperable voltage restoration logic, only 4160V buses 16 and 26 would be affected. 4160V buses 15 and 25 are still within the required surveillance test interval and remain operable. Therefore, consistent with the plant accident analysis, at least one train of safeguards components would remain operable on each unit.

Unit 1 4160V bus 16 and Unit 2 4160V bus 26 are energized and their related controls remain available and capable of responding to any plant transient. Based on the results of past testing and the high reliability of the relays in question, a high degree of confidence exists that all electrical functions, including all portions of the voltage restoration scheme, are fully operable.

Therefore, the requested Emergency License Amendment Request will not significantly affect 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.

There are no new failure modes or mechanisms associated with the requested Emergency License Amendment Request. The proposed change does not involve any modification of plant equipment or changes in operational limits, it only requests the delay of a portion of the surveillance testing of the voltage restoration logic. The proposed surveillance testing interval extension could only impact the operability of the voltage restoration scheme for one train on each unit, no new kind accident could be created.

Therefore, the requested Emergency License Amendment Request does not create the possibility of a new or different kind of accident from any previously evaluated, and the accident analyses presented in the Updated Safety Analysis Report will remain bounding.

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

Assuming that incomplete surveillance testing results in inoperable voltage restoration logic, only 4160V buses 16 and 26 would be affected. 4160V buses 15 and 25 are still within the required surveillance test interval and remain operable. Therefore, consistent with the plant accident analysis, at least one train of safeguards components would remain operable on each unit.

Unit 1 4160V bus 16 and Unit 2 4160V bus 26 are energized and their related controls remain available and capable of responding to any plant transient. Based on the results of past testing and the high reliability of the relays in question, a high degree of confidence exists that all electrical functions, including all portions of the voltage restoration scheme, are fully operable.

Therefore, the requested Emergency License Amendment Request will not result in any reduction in the plant's 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 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.