



Northern States Power Company

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February 14, 1994

10 CFR Part 50
Section 50.90

U S Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

License Amendment Request Dated February 14, 1994
Auxiliary Electrical System Changes

Attached is a request for a change to the Technical Specifications, Appendix A of the Operating Licenses, for Prairie Island Nuclear Generating Plant, Units 1 and 2. This request is submitted in accordance with the provisions of 10 CFR Part 50, Section 50.90.

This License Amendment Request reflects plant modifications being performed as part of NSP's Station Blackout/Electrical Safeguards Upgrade (SBO/ESU) Project for Prairie Island Nuclear Generating Plant, Units 1 and 2. The License Amendment Request includes proposed Technical Specifications changes for those project activities that will be complete upon startup of Prairie Island Unit 1 from a planned Spring 1994 outage. The amendment will be required by approximately June 10, 1994 (the actual need is prior to the time the Unit 1 reactor coolant system is heated up above 200°F toward the end of the outage).

Exhibit A contains a description of the proposed changes, the reasons for requesting the changes and the supporting safety evaluation/significant hazards determination. Exhibit B contains pages of the Prairie Island Technical Specifications revised to show the proposed changes. Exhibit C contains the revised Technical Specifications pages.

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Please contact Jack Leveille (612-388-1121, Ext. 4662) if you have any questions concerning this License Amendment Request.



Roger O Anderson

Director

Licensing and Management Issues

c: Regional Administrator - Region III, NRC
NRR Project Manager, NRC
Senior Resident Inspector, NRC
State of Minnesota
Attn: Kris Sanda
J E Silberg

Attachments:

Affidavit

Exhibit A - Evaluation of the Proposed Changes to the Technical Specifications

Exhibit B - Proposed Changes Marked Up on Existing Technical Specifications Pages

Exhibit C - Revised Technical Specifications Pages

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


LICENSE AMENDMENT REQUEST DATED February 14, 1994

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, describes the reasons for the changes, and contains 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.

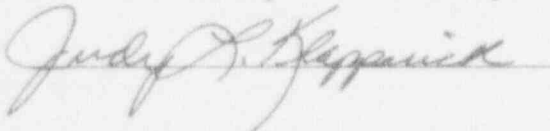
NORTHERN STATES POWER COMPANY

By


Roger O Anderson
Director

Licensing and Management Issues

On this 14th day of February, 1994 before me a notary public in and for said County, personally appeared Roger O Anderson, Director of Licensing and Management Issues, 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.



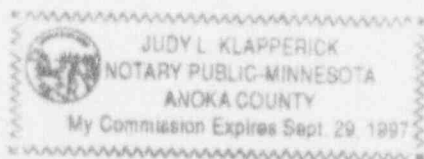


Exhibit A

Prairie Island Nuclear Generating Plant
License Amendment Request Dated February 14, 1994

Evaluation of Proposed Changes to the
Technical Specifications, Appendix A, of
Operating Licenses DPR-42 & DPR-60

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 Appendix A, Technical Specifications:

BACKGROUND

Under what is referred to as the Station Blackout/Electrical Safeguards Upgrade Project (SBO/ESU Project), Northern States Power Company (NSP) installed two new safeguards diesel generators (D5 and D6) and associated equipment at the Prairie Island Nuclear Generating Plant. The two previously installed safeguards diesel generators (D1 and D2) were dedicated to Unit 1 and certain common equipment (whereas they previously had powered safeguards equipment for both units) and the two new emergency diesel generators were dedicated to Unit 2 and certain common equipment. The auxiliary electrical systems configuration resulting from this project along with related SBO/EJU Project improvements and upgrades will significantly improve overall plant safety (most of these configuration changes are already in effect).

These plant changes are described in detail in the SBO/ESU Project Design Report (Reference 1), updated by Revision 1 (Reference 2), and updated by Revision 2 (Reference 3). These plans were further modified as discussed in our letter of December 1993 (Reference 4). That letter states that it is no longer intended to place into service the originally planned solid state 480V buses' voltage regulators.

Although detailed information is provided in these references, a summary of the scope of SBO/ESU Project changes is presented here.

Scope and Description of Modifications

The SBO/ESU Project modifications consist of the following major portions:

- (1) D5/D6 Emergency Diesel Generator addition including the addition of auxiliary support systems;
- (2) New D5/D6 Diesel Generator Building addition;
- (3) Electrical Safeguards modifications including new 4kV and 480V switchgear additions;
- (4) Plant interface connections to equipment within the existing structures; and
- (5) Upgrade of #121 Vertical Motor-Driven Cooling Water Pump for safeguards use.

The majority of the project was completed by the end of December 1992. An earlier license amendment (effective December 17, 1992) was issued which

addressed the Technical Specifications necessary for the portions of the project completed at that time.

However, there are modifications still being implemented. A portion of the project to be completed yet, which is pertinent to this license amendment request, is a portion of item (3), above. That portion is the replacement on Unit 1 of the existing two safeguards 480V buses (one per each safeguards 4160V bus) with four buses (two per each safeguards 4160V bus).

The similar replacement has already been completed on Unit 2 and was addressed in the earlier Technical Specification changes. The proposed Technical Specification changes are intended to incorporate requirements for the operability of these new buses. Note that these changes will provide the same requirements for the new Unit 1 buses as presently exist for the similar buses on Unit 2. The new buses will be made operable during the Spring 1994 Unit 1 refueling outage and the new Technical Specifications operability requirements will apply as the unit is brought above cold shutdown toward the end of the outage.

REFERENCES:

Letter from Thomas M Parker, Northern States Power Company to U S Nuclear Regulatory Commission dated November 27, 1990 titled: "Design Report for Station Blackout/Electrical Safeguards Upgrade Project"

Letter from Thomas M Parker, Northern States Power Company to U S Nuclear Regulatory Commission dated December 23, 1991 titled: "Design Report for Station Blackout/Electrical Safeguards Upgrade Project, Revision 1 (68588 and 68589)"

Letter from Roger O Anderson, Northern States Power Company to U S Nuclear Regulatory Commission dated September 23, 1993 titled: "Design Report for Station Blackout/Electrical Safeguards Upgrade Project, Revision 1(2) (68588 and 68589)"

Letter from Roger O Anderson, Northern States Power Company to U S Nuclear Regulatory Commission dated December 21, 1993 titled: "Updated Design Report for Station Blackout/Electrical Safeguards Upgrade Project (68588 and 68589) (68071)"

addressed the Technical Specifications necessary for the portions of the project completed at that time.

However, there are modifications still being implemented. A portion of the project to be completed yet, which is pertinent to this license amendment request, is a portion of item (3), above. That portion is the replacement on Unit 1 of the existing two safeguards 480V buses (one per each safeguards 4160V bus) with four buses (two per each safeguards 4160V bus).

The similar replacement has already been completed on Unit 2 and was addressed in the earlier Technical Specification changes. The proposed Technical Specifications changes are intended to incorporate requirements for the operability of these new buses. Note that these changes will provide the same requirements for the new Unit 1 buses as presently exist for the similar buses on Unit 2. The new buses will be made operable during the spring 1994 Unit 1 refueling outage and the new Technical Specifications operability requirements will apply as the unit is brought above cold shutdown toward the end of the outage.

REFERENCES:

- (1) Letter from Thomas M Parker, Northern States Power Company to U S Nuclear Regulatory Commission dated November 27, 1990 titled: "Design Report for the Station Blackout/Electrical Safeguards Upgrade Project"
- (2) Letter from Thomas M Parker, Northern States Power Company to U S Nuclear Regulatory Commission dated December 23, 1991 titled: "Design Report for the Station Blackout/Electrical Safeguards Upgrade Project, Revision 1 (TAC Nos. 68588 and 68589)"
- (3) Letter from Roger O Anderson, Northern States Power Company to U S Nuclear Regulatory Commission dated September 23, 1993 titled: "Design Report for the Station Blackout/Electrical Safeguards Upgrade Project, Revision 1(2) (TAC Nos. 68588 and 68589)"
- (4) Letter from Roger O Anderson, Northern States Power Company to U S Nuclear Regulatory Commission dated December 21, 1993 titled: "Updated Information on the Station Blackout/Electrical Safeguards Upgrade Project (TAC Nos. M83070 and M83071)"

PROPOSED TECHNICAL SPECIFICATION CHANGES

Auxiliary Electrical Systems

Technical Specifications 3.7

Proposed Changes

Revise specification 3.7.A.3 and 3.7.B.6 to reflect the new configuration for the Unit 1 480V safeguards bus arrangement (two 480V safeguards buses fed by each safeguards 4160V bus). The proposed specifications would require both 480V safeguards buses per train to be energized and allow one or both of the 480V safeguards buses on a train to be inoperable or not fully energized for 8 hours. This would make the specifications the same for both units since the configuration for the two units will become the same during the outage.

Safety Evaluation and Determination of Significant Hazards Considerations

The proposed changes to the Operating Licenses 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.

SBO/ESU Project modifications as reflected in the proposed Technical Specifications changes were evaluated to determine their impact, if any, on potential transients and accidents as described in the Prairie Island USAR. Each transient and accident was evaluated in terms of the mitigating actions described or assumed in the USAR analysis. The role of the modified systems in mitigating the event was analyzed in order to evaluate whether the modification:

- (1) changed, degraded or prevented actions described or assumed in the USAR analysis;
- (2) altered any assumptions made in evaluating the radiological consequences of the accident;
- (3) played a direct part in mitigating the radiological consequences of the accident; or
- (4) affected any fission product barrier.

The evaluation demonstrated that the USAR transient and accident analyses remain valid and bounding.

As part of the evaluation, the revised emergency diesel generator load sequence was analyzed and found to be bounded by the existing analyses.

In particular, the USAR analyses of the loss of offsite power (LOOP) event and the large break loss of coolant accident (LBLOCA) remain valid and

bounding. In addition, the current USAR analysis for the radiological consequences of a LBLOCA remains valid.

Further, the plant response to a loss of AC power event is not degraded as a result of these changes but, in fact, is significantly improved.

In order to determine the effect of the modifications upon the probability and consequences of an accident, the following items were specifically evaluated:

- (1) the applicable design, material and construction standards;
- (2) instrumentation accuracies and response times;
- (3) the equipment operating and design limits, including electrical bus loading, emergency diesel generator loading and battery loading;
- (4) the system interfaces;
- (5) voltage margins; and
- (6) coordination of protective devices.

Structures, systems and components involved in the modifications were evaluated as follows:

- (1) The design specifications for the new structures, systems and components were considered for the following requirements:
 - seismic;
 - separation including control/power circuit interaction, redundancy/separation of systems, and isolation between safety and non-safety circuits;
 - environmental parameters;
 - severe meteorological events;
 - missiles; and
 - fire protection.

All structures, systems and components meet the appropriate design requirements for their respective classifications.

- (2) Structures, systems and components were additionally evaluated for the following:
 - Structural loads were determined for new cable runs in the existing plant and for new cable penetrations in the existing structures.
 - New electrical loads requirements were determined.
 - System/equipment protection features have been maintained in the modification.
 - Support system performance was specified to maintain the safety function of the equipment.
 - System/equipment redundancy and independence is maintained.
 - The frequency of operation of existing equipment was evaluated and determined not to be affected.

- The testing requirements imposed on new structures, systems and components are in accordance with their safety classification.

Failures of systems and components involved in the modifications were analyzed, and it was determined that all safety functions were maintained.

Required engineered safeguards features loads are accommodated with the improved auxiliary electrical systems configuration; and, as demonstrated by the performance of a failure modes and effects analysis, no single failure will prevent the modified plant from performing its required safety function in the event of an accident on either unit.

For the reasons discussed above, the proposed amendment does not significantly increase 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 evaluated.

The SBO/ESU Project modifications as reflected in the proposed Technical Specifications changes were evaluated to determine if they could create the possibility of a new or different kind of accident from any accident previously evaluated.

The modifications were evaluated to determine the types of accidents which could result from malfunction of the new/modified structures, systems and components. It was determined that no new or different kinds of accidents from those previously evaluated are created. USAR analyses remain bounding.

For these reasons, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The new Unit 1 480V safeguards configuration provides additional circuit breakers for improved motor control center (MCC) feeder circuit coordination by eliminating subfed 480V MCCs from safeguards 480V buses. The proposed Technical Specification changes identify the new 480V buses and require the operability of both of the buses per train rather than the one bus per train of the current configuration and current Technical Specification requirements.

Since the operability requirements are not decreased nor are the allowed out-of-service times increased by the proposed changes, the margin of safety is maintained.

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.

Exhibit B

Prairie Island Nuclear Generating Plant

License Amendment Request Dated February 14, 1994

Proposed Changes Marked Up
On Existing Technical Specifications Pages

Exhibit B consists of existing Technical Specifications pages with the proposed changes highlighted on those pages; the backgrounded text represents the proposed additions and the lined-out text represents the proposed deletions. The existing pages affected by this License Amendment Request are listed below:

TS.3.7-1

TS.3.7-3

3.7 AUXILIARY ELECTRICAL SYSTEMS

Applicability

Applies to the availability of electrical power for the operation of plant auxiliaries.

Objectives

To define those conditions of electrical power availability necessary to assure safe reactor operation and continuing availability of engineered safeguards.

Specification

- A. A reactor shall not be made or maintained critical nor shall reactor coolant system average temperature exceed 200°F unless all of the following requirements are satisfied for the applicable unit (except as specified in 3.7.B below):
1. At least two separate paths from the transmission grid to the unit 4 kV safeguards distribution system each capable of providing adequate power to minimum safety related equipment, shall be OPERABLE.
 2. The 4 kV safeguards buses 15 and 16 (Unit 2 buses: 25 and 26) shall be energized.
 3. The 480 V safeguards buses ~~110 and 120~~ 111, 112, 121, and 122 (Unit 2 buses: 211, 212, 211 and 222), and their safeguards motor control centers shall be energized.
 4. Reactor protection instrument AC buses shall be energized: 111, 112, 113 and 114 (Unit 2 buses: 211, 212, 213 and 214).
 5. The following unit specific conditions apply:
 - (a) Unit 1: D1 and D2 diesel generators are OPERABLE, and a fuel supply of 51,000 gallons is available for the D1 and D2 diesel generators in the Unit 1 interconnected diesel fuel oil storage tanks. A total fuel supply of 70,000 gallons is available for the D1 and D2 diesel generators and the diesel-driven cooling water pumps in the Unit 1 interconnected diesel fuel oil storage tanks.
 - (b) Unit 2: D5 and D6 diesel generators are OPERABLE and a fuel supply of 75,000 gallons is available for D5 and D6 diesel generators in the Unit 2 interconnected diesel fuel oil storage tanks.
 6. Both batteries with their associated chargers and both d-c safeguard systems shall be OPERABLE.
 7. No more than one of the Instrument AC Panels 111, 112, 113 and 114 (Unit 2 panels: 211, 212, 213 and 214) shall be powered from Panel 117 (Unit 2 panel: 217) or its associated instrument inverter bypass source.

- 3.7.B.5. D1 and D2 (Unit 2; D5 and D6) diesel generators may be inoperable for 2 hours provided the two required paths from the grid to the unit 4 kV safeguards distribution system are OPERABLE and the OPERABILITY of the two required paths from the grid are verified OPERABLE within 1 hour.
6. One 4 kV safeguards bus (and/or its associated 480 V buses ~~(Unit 2 buses)~~ including associated safeguards motor control centers) ~~or one 480 V safeguards bus including associated safeguards motor control centers~~ may be inoperable or not fully energized for 8 hours provided the redundant 4 kV safeguards bus and its associated 480 V safeguards buses ~~(Unit 2 buses)~~ are verified OPERABLE and the diesel generator and safeguards equipment associated with the redundant train are OPERABLE.
 7. One battery charger may be inoperable for 8 hours provided, (a) its associated battery is OPERABLE, (b) its redundant counterpart is verified OPERABLE, and (c) the diesel generator and safeguards equipment associated with its counterpart are OPERABLE.
 8. One battery may be inoperable for 8 hours provided that the other battery and both battery chargers remain OPERABLE.
 9. In addition to the requirements of Specification TS.3.7.A.7 a second inverter supplying Instrument AC Panels 111, 112, 113, and 114 may (Unit 2 panels 211, 212, 213 and 214) be powered from an inverter bypass source for 8 hours.