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November 4, 2021

L-PI-21-045
10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Prairie Island Nuclear Generating Plant, Units 1 and 2
Docket Nos. 50-282 and 50-306
Renewed Facility Operating License Nos. DPR-42 and DPR-60

Response to Request for Additional Information RE: Cooling Water System License
Amendment Request Prairie Island Nuclear Generating Plant, Units 1 and 2

- References:
- 1) Letter (L-PI-21-029) from NSPM to the NRC, "Exigent License Amendment Request to Revise Technical Specification 3.7.8 to Allow a One-Time Extension of the Completion Time of Required Action B.1," dated October 7, 2021 (ADAMS Accession No. ML21281A017)
 - 2) Email from the NRC to NSPM, "Requests for Additional Information Cooling Water System License Amendment Request Prairie Island Nuclear Generating Plant, Units 1 and 2 Docket Nos. 50-282 And 50-306," dated October 29, 2021 (ADAMS Accession No. ML21305A010)

In Reference 1, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), submitted a license amendment request to the Technical Specifications (TS) for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The proposed amendment would modify TS 3.7.8 to make a one-time extension to the Completion Time of TS 3.7.8, Required Action B.1. The proposed amendment supports a contingency for the planned work to replace PINGP cooling water (CL) system supply header piping. The NRC identified the need for additional information and provided the Request for Additional Information (RAI) in Reference 2. The enclosure to this letter provides NSPM's response to the NRC RAI.

The information provided in this letter does not alter the evaluations performed in accordance with 10 CFR 50.92 in Reference 1.

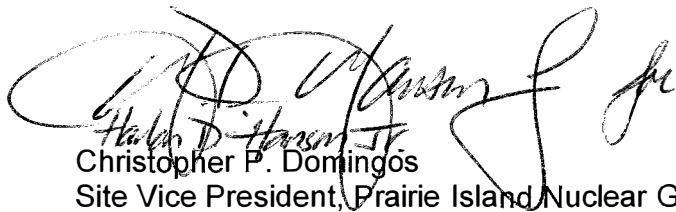
NSPM is notifying the State of Minnesota of this request by transmitting a copy of this letter and enclosures to the designated State Official.

Please contact Mr. Jeff Kivi at (612) 330-5788 or Jeffrey.L.Kivi@xcelenergy.com if there are any questions or if additional information is needed.

Summary of Commitments

This letter makes no new commitments and no revisions to existing commitments.

I declare under penalty of perjury, that the foregoing is true and correct.
Executed on November 4, 2021.



Christopher P. Domingos
Site Vice President, Prairie Island Nuclear Generating Plant
Northern States Power Company – Minnesota

Enclosure

cc: Administrator, Region III, USNRC
Project Manager, Prairie Island, USNRC
Resident Inspector, Prairie Island, USNRC
State of Minnesota

Response to Request for Additional Information RE:

Cooling Water System License Amendment Request Prairie Island Nuclear Generating Plant, Units 1 and 2

1.0 BACKGROUND

In Reference 1, Northern States Power Company, a Minnesota corporation, doing business as Xcel Energy (hereafter "NSPM"), submitted a license amendment request to the Technical Specifications (TS) for the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. The proposed amendment would modify TS 3.7.8 to make a one-time extension to the Completion Time of TS 3.7.8, Required Action B.1, which verifies the operability of the 121 Motor-Driven Cooling Water Pump (MDCLP). The proposed amendment supports a contingency for the planned work to replace PINGP cooling water (CL) system supply header piping. The NRC identified the need for additional information and provided the Request for Additional Information (RAI) in Reference 2. The enclosure to this letter provides NSPM's response to the NRC RAI.

2.0 RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION

Background:

By letter dated October 7, 2021 (Agencywide Documents Access and Management System (ADAMS) at Accession No. ML21281A017) Northern States Power Company, doing business as Xcel Energy [NSPM], requested an amendment to the Technical Specifications (TS) for the Prairie Island Nuclear Generating Plant, Units 1 and 2 (Prairie Island). The proposed amendment would allow a one-time extension of the completion time for required action B.1 of TS 3.7.8.

The Cooling Water (CL) System takes inventory from Mississippi River and is shared between both units. The system provides cooling (heat sink) for safety related components during accident (DBA) or transient. The license amendment request (LAR) states that sections of the Prairie Island CL System supply header piping will be replaced because microbiologically induced corrosion (MIC) has occurred. The LAR further states that if the valve that is planned to provide isolation is found to leak by excessively, a blind flange will be installed to provide isolation. The amendment states that the contingency will require entry into [Limiting Condition for Operation] LCO 3.7.8, Required Action B.1 which has a completion time of 4 hours. The amendment further states that installation of the blind flange would result in entry into Required Action B.1 for an estimated 36 hours for both removal and installation of the blind flange. The overall modification regarding both units could result in the plant being in the TS condition with lack of redundancy four times for 36 hours each. The LAR did not provide probabilistic information to justify low risk and/or lack of redundancy during blind flange installation.

Regulatory Evaluation:

Prairie Island was not licensed to the 10 CFR 50, Appendix A, General Design Criteria (GDC). Prairie Island was designed and constructed to comply with Northern States Power Company's understanding of the intent of the AEC General Design Criteria for Nuclear Power Plant Construction Permits, as proposed on July 10, 1967. However, the AEC Safety Evaluation Report acknowledged that the AEC staff assessed the plant, as described in the Updated Safety Analysis Report (USAR), against the Appendix A design criteria.

USAR Section 1 defines Criterion 41 "Engineered Safety Features Performance Capability" as engineered safety features such as emergency core cooling and containment heat removal systems shall provide sufficient performance capability to accommodate partial loss of installed capacity and still fulfill the required safety function. As a minimum, each engineered safety features shall provide this required safety function assuming a failure of a single active component. To meet this requirement, the USAR states that sufficient redundancy and duplications is incorporated into the design of the engineered safety features to ensure that they may perform their function adequately even with the loss of a single active component.

Request:

TS 3.7.8, ACTION B.1 and B.2 have Completion Times of 4 hours and B.3 is 72 hours or in accordance with the risk informed completion time program. The TS bases state that the Completion Times are based on the redundant capabilities afforded by the operable train. With the proposed LAR to isolate pumps while installing blind flange, the required action would no longer ensure the added capabilities of redundant pumps with only one safeguard diesel driven pump required operable to supply cooling water to an operable train.

Explain how the redundant capabilities relied upon for the existing Completion Time requirements for Condition B would be satisfied with just the diesel-driven CL pump required to be operable. If any additional components are relied upon to provide the redundant capabilities relied upon as the basis for the Completion Times, describe how the redundant capabilities would be ensured during the extended completion time for Action B.1.

NSPM Response to RAI

Because TS 3.7.8 Required Action B.1 is included in Condition B to provide added assurance that there is a safeguards CL pump to supply the operable header and this Required Action is relied upon as a basis for the existing Condition B Completion Times,

NSPM plans to take a number of actions to minimize the risk during the CL header maintenance windows.

The increased risk associated with simultaneous removal of multiple structures, systems, trains, or components from service is assessed and managed in accordance with 10 CFR 50.65(a)(4). In this case, because there is a RICT associated with Required Action B.3 of TS 3.7.8, use of the RICT Program and implementation of RMAs prior to starting work will also assess and manage the risk of the resulting plant configuration, including unavailability of 121 MDCLP if it becomes necessary to temporarily expand the isolation boundary in order to install a blind flange. Detailed discussion of the available components and risk management actions (RMAs) associated with the CL header replacement and the proposed one-time Completion Time change is included below.

During the one-time extension of the Completion Time for TS 3.7.8, Required Action B.1, operation of the CL system during the work on Train A CL header will include the non-safeguards 21 MDCLP running to supply the CL loads with 22 diesel driven CL pump (DDCLP) Operable and in standby to run if system pressure and flow requirements require it. While non-safety related, the 21 MDCLP will continue operating to provide redundancy for events where offsite power is available. The associated DDCLP will auto-start on low header pressure if needed. In the unlikely event of a design basis event (Safety Injection (SI) on one unit and loss of offsite power) occurs during the one-time extension of the Completion Time for TS 3.7.8, Required Action B.1, the Train B header and all long-term post-accident loads on the accident unit and MODE 3 loads on the opposite unit will be served by the Train B 22 DDCLP. This configuration meets the PINGP design basis when one train of CL header is inoperable and Unit 1 and Unit 2 are in TS 3.7.8, Condition B. Thus, while in this example the Train A loads would lose CL when the header splits in response to an SI, the Train B loads would still have CL. A similar configuration will exist for the Train B header work. The risk of being in the one-time extended Completion Time will be assessed and managed by the 10 CFR 50.65(a)(4) Program and the RICT Program, which includes accounting for the unavailability of the 121 MDCLP concurrent with an inoperable CL header in the establishment of a RICT for TS 3.7.8, Required Action B.3.

For the duration of the planned work, NSPM plans to maintain the CL header crossover valves on the CL header in the open configuration (not split into trains), which maximizes the availability of components that are supported by CL. The CL header crossover valves (MV-32144 and MV-32159) will be open to allow back feeding of Train A CL header from the Train B CL header during work on the Train A CL header and vice versa. The CL header crossover valves will close and the ring header will split in the event of a SI signal.

As such, not all of the supported components associated with the inoperable CL header will be unavailable even if they are inoperable as a result of the header being inoperable. These components will be documented as such in accordance with the RICT Program.

The following is an example of Train A components that will remain available for non-SI initiating events during the work on the Train A CL header. The list is similar for work on the Train B CL header.

- 121 Control Room Chiller (Train A)
- 11/13 Containment Fan Coil Units (Unit 1 Train A) and 21/23 Containment Fan Coil Units (Unit 2 Train A)
- 11 SI Pump (Unit 1 Train A) and 21 SI Pump (Unit 2 Train A)
- 11 Residual Heat Removal Pump (Unit 1 Train A) and 21 Residual Heat Remove Pump (Unit 2 Train A)
- 11 Containment Spray Pump (Unit 1 Train A) and 21 Containment Spray Pump (Unit 2 Train A)
- 11 Turbine Driven Auxiliary Feedwater Pump (Unit 1 Train A) and 21 Motor Driven Auxiliary Feedwater Pump (Unit 2 Train A) with their respective condensate storage tank supply valves open and available
- 11 Component Cooling Water Pump (Unit 1 Train A) and 21 Component Cooling Water Pump (Unit 2 Train A)

Further, while not TS related components, the following components will be managed to minimize risk:

- 121 Instrument Air Compressor will be aligned as the second standby compressor and will remain available.
- 122 and 123 Instrument Air Compressors available and assigned as Lead and First Standby compressor with Train B CL header supplying CL to these compressors.

While some of the available components would become unavailable in the event of an SI, the probability of this occurring during the one-time Completion Time extension period remains low consistent with the Bases for the Completion Times of TS 3.7.8 Condition B Required Actions.

For example, the following components served by the Train A CL header will be made unavailable for all initiating events:

- D1 (Unit 1 Train A) diesel generator will be placed in pullout for asset protection to prevent running without CL flow in the event of an SI.
- All four CL pump discharge motor valves (MV-32034, MV-32035, MV-32036, and MV-32037) will be positioned with their respective breakers open rendering them unavailable.
 - If a blind flange is needed for isolation, it will be installed on MV-32034.
- The Train A CL Strainers will be within the isolation boundary and unavailable.
- The 12 DDCLP (Train A) will be within the isolation boundary and unavailable.
- The CL supply to the 11 Turbine Driven Auxiliary Feedwater Pump (Unit 1 Train A) and 21 Motor-Driven Auxiliary Feedwater Pump (Unit 2 Train A) will be unavailable in the event of an SI.

Due to the significance of this maintenance evolution, all RMAs will be implemented prior to the start of the work. This approach is consistent with the NSPM Maintenance Rule and RICT programs. No additional RMAs are needed if the isolation boundary is temporarily expanded to support installation of a blind flange. For example, the following equipment will be protected for the performance of the isolation of Train A CL Supply Header, whether or not it becomes necessary to remove the 121 MDCLP from service:

- 12 Residual Heat Removal Pump
- 22 Residual Heat Removal Pump
- 12 SI Pump
- 22 SI Pump
- 12 Containment Spray Pump
- 12/14 Containment Fan Coils
- 22 Containment Spray Pump
- 22/24 Containment Fan Coils
- 22 Turbine Driven Auxiliary Feedwater Pump
- 12 Motor Driven Auxiliary Feedwater Pump
- 12 Component Cooling Pump
- 22 Component Cooling Pump
- 122 Safeguards Traveling Screen
- 122 Control Room Chiller
- D2 Diesel Generator
- 121 MDCLP (unless it becomes necessary to temporarily expand the isolation boundary to install the blind flange)
- 22 DDCLP
- 21 MDCLP and associated 4kV breaker
- Motor valves MV-32144 and MV-32157 and associated breakers
- 21 CL Strainer 22 CL Strainer
- 122 and 123 Instrument Air Compressors
- 124 and 125 Station Air Compressor

The planned work weeks have been reviewed for interferences with the risk management strategy. For example, hot work will be prohibited in the fire areas of elevated risk.

Therefore, in response to the reduction in redundancy of safeguards pumps on the operable header that results from the one-time extended Completion Time for Required Action B.1, NSPM plans to manage the risk by:

- Assessing and managing risk in accordance with the NSPM 10 CFR 50.65(a)(4) and RICT Programs including Implementing RMAs before starting work
- Placing the CL header into a configuration that maximizes availability of safety systems
- Removing potentially conflicting or interfering work activities from the planned work weeks, including prohibiting hot work in areas of elevated risk

3.0 REFERENCES

1. Letter (L-PI-21-029) from NSPM to the NRC, "Exigent License Amendment Request to Revise Technical Specification 3.7.8 to Allow a One-Time Extension of the Completion Time of Required Action B.1," dated October 7, 2021 (ADAMS Accession No. ML21281A017)
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