



**Northern States Power
Company**

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

April 24, 2000

10 CFR 50.71(e)

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

**Submittal of Revision No. 21 to the
Updated Safety Analysis Report (USAR)**

Pursuant to 10 CFR 50.71(e) we are submitting one original and 10 copies of Revision No. 21 to the Updated Safety Analysis Report (USAR) for the Prairie Island Nuclear Generating Plant. This revision brings the USAR up-to-date as of March 3, 2000.

Attachment 1 contains descriptions and summaries of safety evaluations for changes, tests, and experiments made under the provisions of 10 CFR 50.59 during the period since the last update.

Attachment 2 contains the USAR page changes and instructions for entering the pages.

In this letter we have made no new Nuclear Regulatory Commission commitments.

I certify that the information presented herein accurately presents changes made since the last updating submittal of the Prairie Island USAR.

AC53 1/14

USNRC
April 24, 2000

Please contact Arne Hunstad (651-388-1121, Ext. 4152) if you have any questions related to this letter.

A handwritten signature in black ink, reading "Joel P. Sorensen". The signature is fluid and cursive, with the first name "Joel" being the most prominent part.

Joel P. Sorensen
Site General Manager
Prairie Island Nuclear Generating Plant

c: Regional Administrator – Region III, NRC
Senior Resident Inspector, NRC
NRR Project Manager, NRC
J E Silberg

Attachments: 1. Safety Evaluation Summaries
2. USAR page changes

ATTACHMENT 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT REPORT OF CHANGES, TESTS AND EXPERIMENTS – MARCH 2000

Below are a brief description and a summary of the safety evaluation for each of those changes, tests, and experiments which were carried out without prior NRC approval, pursuant to the requirements of 10 CFR Part 50, Section 50.59(b).

Modification 89L082 – RHR Flow Control Valves Mechanical Stops

Description of Change

Mechanical stops were added to RHR flow control valves to limit RHR flow should the valves fail open while the RCS is in the drained down condition. This change to the plant was originally made under the Alteration process which was in effect at the time.

Summary of Safety Evaluation

The valve stops would remain full open during normal operation, and would be used only with the RCS in a drained down condition. Adjustment of the stops is under administrative control.

Modification 94L483 Part A – Darmatt KM1 Fire Barrier Installation

Description of Change

This Safety Evaluation addressed the sealing of Appendix R fire boundaries which were discovered to have inadequate fire barriers. These boundaries are needed to meet the requirements of 10CFR50 Appendix R.

Summary of Safety Evaluation

After modification, these penetrations meet the commitments made in the original Appendix R exemption requests and the requirements of the USAR.

Modification 97EA02 – Cooling Tower 4.16KV Breaker Replacement

Description of Change

Reliability of cooling tower 4.16KV air circuit breakers was deteriorating and they were no longer serviceable due to unavailability of new parts. The air circuit breakers were replaced with vacuum circuit breakers.

Summary of Safety Evaluation

The change from air circuit breakers to vacuum circuit breakers did not affect the failure modes of the breakers, nor did it affect the resultant consequences of a breaker failure. There is no negative impact on any analyzed accidents and no new accidents were introduced as a result of this modification. The reliability of the cooling tower safeguards feeds may be significantly improved with the performance and maintenance improvements associated with these breakers.

Modification 97ZN02 – Control Room Air Handler Replacement Damper

Description of Change

This modification replaced the discharge damper for the Train "A" Control Room Air Handler Fan (Unit 1) and the discharge damper for the Train "B" Control Room Air Handler Fan (Unit 2). The component identifications are CD-34143 and CD-34144, respectively. The new dampers are of identical dimension (42 inch x 26 inch) and consist of three opposed blades. The damper requires a single air-operated actuator to rotate the damper blades to their required position. The control logic for the damper position remains unchanged.

Summary of Safety Evaluation

This modification replaced the existing Control Room Air Handler Fan Discharge dampers with dampers of the same fit, form, and function. The vendor-supplied calculation documents that the dampers will remain functional during and after a design basis seismic event. There are no control logic or power source changes. Therefore, this modification does not present any unreviewed safety question.

Modification 98ZN05 – Replacement of Control Room Ventilation Dampers

Description of Change

The outside air supply dampers to the control room, CD-34176, CD-34177, CD-34142, and CD-34145 were replaced with lower leakage dampers. The exhaust air dampers for the control room, CD-34146 and CD-34147 were also replaced with lower leakage dampers. Changes to the dampers include replacing the limit switches, actuators, solenoids on CD-34177, and cable routing or support modifications. Fire dampers were installed in the wall at the ventilation penetrations. One 3-hr damper was installed per penetration.

Summary of Safety Evaluation

The safety evaluation provides the basis for the determination that these changes do not create an unreviewed safety question. The existing dampers did not meet the design basis requirements of the LOCA or MSLB control room dose analysis. Also,

they did not meet the design basis requirements of the HELB analysis. The replacement dampers meet those requirements. The replacement dampers perform the same function as the originals, but differ in form and fit.

Safety Evaluation 478-14-15 – USAR Update-Section 14.4.4, CVCS Malfunction Transient Analysis

Description of Change

This SE evaluated proposed changes to USAR Section 14.4.4, identified as part of the USAR update project. Section 14 of the USAR addresses the transient and accident analysis performed for Prairie Island. Specifically, Section 14.4.4 addresses the analysis of a malfunction in the chemical and volume control system which initiates an inadvertent dilution of the RCS. The changes made to this section address editorial changes, updates due to previous 10CFR50.59 evaluations and NRC SER's, and clarifications to describe plant configuration and operation. The section has been reformatted to more closely describe the methodology, general inputs and assumptions in the NSP Reload Safety Evaluation Methods for Prairie Island, which have been reviewed and approved by the NRC. The actual inputs and results are still reflected in the plant reload safety evaluation attached as Appendix 14B (Unit 1) and 14C (Unit 2) to the USAR, which are unchanged by this safety evaluation.

Summary of Safety Evaluation

These changes have no effect on any of the methods, inputs or assumptions used in any analysis. Thus, there is no potential increase in consequences or a reduction in margin of safety. These changes do not affect any assumptions or precursors which could lead to any different types of accidents. These changes do not adversely affect the design or operating assumptions used in any accident analyses for any structures, systems, or components important to safety. The assumptions regarding component performance are consistent with their design bases. Thus, there is no increase in the probability of an accident or equipment malfunction previously evaluated, nor is there the possibility of creating an accident or equipment malfunction of a different type. Therefore, these changes do not constitute an unreviewed safety question.

Safety Evaluation 527-05-02 – USAR Update-Section 5.2.2.2.1, Hot Penetrations

Description of Change

USAR Section 5.2.2.2.1 states that all hot penetrations were equipped with a temperature element located near the penetration. This is true for all hot penetrations except for the Steam Generator Blowdown penetrations. The USAR description is being revised to remove the statement that all hot penetrations are equipped with temperature elements near the penetration.

Summary of Safety Evaluation

The absence of a temperature element near a hot containment penetration does not affect any accident assumption nor is it associated with the mitigation of any accident. Containment penetration temperature is not a parameter needed by operations for normal or emergency operation and knowledge of this temperature is not assumed for any accidents evaluated in the USAR. Therefore, consequences and probabilities of accidents and malfunctions does not change. No new equipment is added nor will existing equipment will be operated in a way that is outside its intended design. No changes are made to any procedures or methods of operation by this change. Therefore, this change can not initiate an accident or malfunction of a different type. Equipment covered by this SE is not discussed in the basis for any technical specifications. Therefore, there can be no reduction in any safety margin as a result of this change.

Safety Evaluation 527-10-02 – DDCLP Jacket Water Heaters Not Interlocked with Lube Oil Pumps

Description of Change

The last sentence of the fourteenth paragraph of USAR Section 10.4.1.2, "The electric heaters are interlocked with the starter of the lube oil circulating pump such that the pump is running before the heaters are energized," was deleted.

Summary of Safety Evaluation

Neither the DDCLP jacket water heater nor the constant lube oil pumps are needed to support DDCLP operability. The DDCLP's can perform their safety function without either the jacket water heaters or the constant lube oil pumps. The jacket water heaters are operating as originally designed.

Safety Evaluation 549 – Normal Operation with 2 Charging Pumps in Service

Description of Change

The normal plant operating configuration, as described in the USAR, Tech Spec Bases, and Operating Procedures, is to have one CVCS charging pump per unit in service. The SE justifies normal plant operation with up to 2 charging pumps per unit in service.

Summary of Safety Evaluation

The charging pumps are not required to operate in response to any design basis accident. The configuration proposed by this SE does not increase the probability or consequences, nor does it create the possibility of a different type of accident or malfunction.

Safety Evaluation 550 – Temporary Repair of CV-31329

Description of Change

This SE evaluated the temporary repair by use of Furmanite on CV-31329, 11 Regen HX Spray to 11 Pzr CV. The valve was leaking slightly and is not isolable.

Summary of Safety Evaluation

The leakage is really no more than a housekeeping problem. Long term effects, though, could be deterioration of the body-to-bonnet bolting material from boric acid exposure. Permanent repair will be effected at refueling.

Safety Evaluation 551 – USAR Update – Transfer to Recirculation

Description of Change

This SE evaluated proposed changes to the USAR for the description of ECCS Operations during post-LOCA mitigation. These changes make the USAR consistent with the Emergency Operating Procedures. The changes address editorial changes, updates due to previous 10CFR50.59 evaluations and NRC SER's, and clarifications to describe plant configuration and operation.

Summary of Safety Evaluation

These changes have no effect on any of the methods, inputs or assumptions used in any analysis. Thus, there is no potential increase in consequences or a reduction in margin of safety. These changes do not affect any assumptions or precursors which could lead to any different types of accidents. These changes do not adversely affect the design or operating assumptions used in any accident analyses for any structures, systems, or components important to safety. The assumptions regarding component performance are consistent with their design bases. Thus, there is no increase in the probability of an accident or equipment malfunction previously evaluated, nor is there the possibility of creating an accident or equipment malfunction of a different type. Therefore, these changes do not constitute an unreviewed safety question.

Safety Evaluation 552 – Pressurizer Heater Capacity Requirements

Description of Change

This safety evaluation evaluated proposed changes to the USAR and Technical Specification Bases to define the minimum capacity for the pressurizer heaters to consider them operable. The minimum operability requirements are based on maintaining the RCS in a sub-cooled condition during natural circulation. This provides reasonable assurance of adequate core cooling during natural circulation operation.

Also evaluated was the minimum heater capacity operation to prevent a reactor trip during an operational transient considered in the design of the control systems. This ensures that the potential effects from a design operational transient are not worsened. The pressurizer heaters have potential impacts on the capability to perform other plant conditions and operations. These are discussed as part of this safety evaluation and concluded that these have only operational considerations and do not pose any safety concerns.

Summary of Safety Evaluation

These changes have no effect on any of the methods, inputs or assumptions used in any analysis. As the intent is to maintain the RCS in a sub-cooled condition, there is reasonable assurance of adequate core cooling. Thus, there is no potential increase in consequences or a reduction in margin of safety. These changes do not affect any assumptions or precursors which could lead to any different types of accidents. These changes do not adversely affect the design or operating assumptions used in any accident or transient analyses for any structures, systems, or components important to safety. Thus, there is no increase in the probability of an accident or equipment malfunction previously evaluated, nor is there the possibility of creating an accident or equipment malfunction of a different type. Therefore, these changes do not constitute an unreviewed safety question.

ATTACHMENT 2

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Revision 21 to the Updated Safety Analysis Report

Instructions:

1. Remove and discard individual USAR pages, tables, and figures and replace with the new pages provided. Special instructions, where applicable, are included with the replacement pages.
2. When page removal/replacement is complete, review the USAR List of Effective Pages to ensure your copy of the USAR is current and complete. Contact NSP Nuclear Licensing at 651-388-1121, Extension 4152 if you require additional assistance.