



Northern States Power Company

Prairie Island Nuclear Generating Plant

1717 Wakonade Dr. East
Welch, Minnesota 55089

February 24, 1997

10 CFR Part 2

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

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

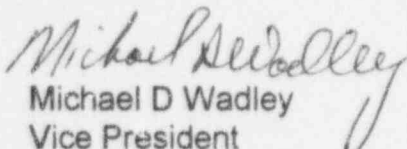
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Reply to Notice of Violation (Inspection Report 96015),
Unreviewed Safety Questions Regarding the Emergency Intake Line

Your letter of January 23, 1997, which transmitted Inspection Report No. 96015, required a response to a Notice of Violation. Our response to the violation is contained in the attachment to this letter.

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

Please contact Jack Leveille (612-388-1121, Ext. 4662) if you have any questions related to this letter.


Michael D Wadley
Vice President
Nuclear Generation

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

Attachment: RESPONSE TO NOTICE OF VIOLATION

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RESPONSE TO NOTICE OF VIOLATION

VIOLATION

10 CFR 50.59(a) states, in part, that a holder of a license may make changes in the facility as described in the safety analysis report, without prior Commission approval, unless the proposed change involves an unreviewed safety question. A proposed change shall be deemed to involve a unreviewed safety question if the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety previously evaluated in the safety analysis report may be increased or if the possibility for an accident or malfunctions of a different type than evaluated previously in the safety analysis report may be created.

Prairie Island Updated Safety Analysis Report, Section 10.4.1.2.2 states, in part, that the emergency cooling water intake line was designed to deliver no less than 18,000 gpm with a crib submergence of no more than 4.5 feet caused by the failure of Lock and Dam No. 3. Specific hydraulic analysis has shown that, with the expected lowest river level, the 36-inch intake line should be capable of delivering at least 22,500 gpm, and with Lock and Dam No. 3 intact, could deliver at least 30,000 gpm.

Contrary to the above, on November 28, 1995, after determining that the emergency cooling water intake line was incapable of meeting the required FSAR flows, the licensee approved a safety evaluation that credited the use of a non-seismic intake canal and operator action to ensure adequate cooling water flows to the safety-related cooling water pumps. The combination of operator action and the use of the non-seismic intake canal to meet the requirements of the FSAR created an unreviewed safety question because they introduced the potential for creating an accident or malfunction of a type different than evaluated previously in the FSAR.

This is a Severity Level III Violation (Supplement I).
Civil Penalty - \$50,000.

RESPONSE TO VIOLATION

Response to Violation

Northern States Power Company admits to the violation and concurs with its content. The Civil Penalty was paid by wire on February 17, 1997.

Reason for the Violation

The reason for the violation stemmed primarily from a difference in the interpretation of the plant design and the design basis between Prairie Island and NRC. Prairie Island reviewed numerous design documents to gain a better understanding of the effect of a seismic event on the cooling water system and the role of the emergency intake line. Prairie Island design documents detail equipment that is built and installed to seismic qualification criteria. However, there is not an analysis detailing the plant or cooling water system response to a design seismic event. The emergency intake line, cooling water pumps and piping system are built to seismic criteria. Therefore, they can be expected to function during and after a seismic event. Equipment not specifically qualified to seismic criteria is assumed not to function during and after a seismic event. Combining all of this information, the Prairie Island staff determined that the flow demand of the cooling water system, by design, has always had the potential to exceed the capacity of the emergency intake line. Therefore, the Prairie Island staff believed that operator action has always been needed to respond to a seismic event. The Prairie Island staff developed procedures (in November 1995) to provide guidance to the operators. The NRC disagreed with this position and determined that use of operator action to ensure effective performance of systems important to safety constituted an unreviewed safety question (we had preliminary verbal information of the NRC position in August 1996, preliminary written information of the position in a November 1996 NRC Inspection Report, and final written confirmation was not received until January 1997 in the form of this violation).

When operator action was put in place, it was recognized that there must be an adequate time frame available for operator response. The volume of water available in the intake canal provided sufficient time for the operators to complete cooling water system load management. However, the intake canal was not constructed to seismic criteria. However, Safety Guide 27 (now Reg Guide 1.27) indicates that for assumed failures of dams and canal walls it is not necessary to assume the failure is instantaneous. Therefore, Prairie Island assumed that time would be available for operator action prior to complete blockage of the intake canal. The NRC disagreed with this conclusion and determined that taking credit for the non-seismic intake canal was an unreviewed safety question.

The combination of an unclear and incomplete design basis for the cooling water system integrated response to a seismic event and incomplete documentation of design decisions made during plant design led to the above assumptions. In identifying and resolving this complex issue, Prairie Island believes that plant safety has been improved. However, in strict compliance, this issue should have been identified as an unreviewed safety question.

Corrective Steps That Have Been Taken and the Results Achieved

The corrective action that has been taken is to submit a License Amendment Request for a change to the Updated Safety Analysis Report and the Technical Specification bases. This request is currently being reviewed by NRC.

Corrective Steps to be Taken to Avoid Further Violations

The corrective steps taken to avoid further violations cover a broad spectrum. The technical staff engineering groups were briefed on the more recent expectations concerning 10 CFR 50.59 evaluations. The administrative procedure providing guidance for performing a 10 CFR 50.59 evaluation is being revised to reflect the most recent understandings. Additionally, a screening process was developed to document decisions when a 10 CFR 50.59 evaluation is not required for a given activity. The screening process has been evaluated over the past few months and is now being incorporated into the revision for the administrative procedure for 10 CFR 50.59 evaluations.

The Operations Committee members have discussed the expectations for the content of a 10 CFR 50.59 evaluation. The Operations Committee now has a higher standard for 10 CFR 50.59 evaluation content and is more sensitive to what may constitute an unreviewed safety question. For example, in November 1996 the Operations Committee determined that degradation of Boraflex in the Spent Fuel Pool created a condition that constituted an Unreviewed Safety Question.

Prairie Island contracted an outside contractor experienced in the preparation and review of 10 CFR 50.59 evaluations to perform an independent assessment of Prairie Island 10 CFR 50.59 evaluations. This review was conducted in the first half of 1996. Their scope was to 1) review a sampling of evaluations (165) to determine the technical adequacy and completeness, 2) evaluate the cumulative impact of evaluations to determine if safety margins have been eroded, and 3) evaluate the administrative controls. Results were acceptable in all areas. However, areas for improvement were identified. Measures are being implemented to improve the identified weaknesses.

It has been recognized that a 10 CFR 50.59 safety evaluation may not have been the proper vehicle to disposition the problems encountered with the emergency intake line.

A better approach would have been to prepare a justification for continued operation and submit a license amendment request to change the Updated Safety Analysis Report and Technical Specification basis. Work is ongoing to develop a plant process to capture the lessons learned.

It has also been recognized that concerns which had been conveyed to plant staff in April 1996 by NRC inspectors had not been addressed in the plant analysis of the acceptability of the compensatory measures invoked until they had been restated at the enforcement conference in November 1996. Since senior plant management had not been made cognizant of these concerns by plant staff in April, an effort will be made to ensure that senior plant management always has an exit meeting with NRC inspectors prior to their departure in order to hear the concerns first hand.

Date When Full Compliance Will Be Achieved

Full compliance will be achieved when the License Amendment is issued in response to the License Amendment Request dated January 29, 1997 (which addresses the emergency intake line issues).