

May 14, 1991

Docket Nos. 50-282
and 50-306

Mr. T. M. Parker, Manager
Nuclear Support Services
Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Dear Mr. Parker:

SUBJECT: REQUEST FOR RELIEF FROM ASME CODE REPAIR REQUIREMENTS FOR CODE
CLASS 3 PIPING AT PRAIRIE ISLAND, UNITS 1 AND 2 (TAC NOS. 79889
AND 79890)

By letter dated February 27, 1991, Northern States Power Company requested relief from ASME Code Class 3 repair requirements of moderate energy cooling water system piping at Prairie Island Nuclear Generating Plant. The staff has evaluated the request for relief and has determined that code repairs are impractical as defined in Generic Letter 90-05, "Guidance for Performing Temporary Non-Code Repairs of ASME Code Class 1, 2, and 3 Piping."

Pursuant to 10 CFR 50.55a(g)(6)(i), relief is granted until no later than the scheduled two-unit outage in 1992. The basis for our findings is provided in the enclosed Safety Evaluation. Please call me if there are any questions.

This action completes the staff review effort for this item.

Sincerely,

/s/

L. B. Marsh, Director
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Timothy H. Colburn".

L. B. Marsh, Director *for*
Project Directorate III-1
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosure:
As stated

cc: See next page

Mr. T. M. Parker
Northern States Power Company

Prairie Island Nuclear Generating
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM ASME CODE

CODE CLASS 3 PIPING REPAIR REQUIREMENTS

NORTHERN STATES POWER COMPANY

PRAIRIE ISLAND NUCLEAR STATION, UNITS 1 and 2

DOCKET NOS. 50-282 AND 50-306

I. BACKGROUND

Temporary Non-Code Repairs

The Code of Federal Regulations 50.55a(g) requires nuclear power facility piping and components to meet the applicable requirements of Section XI of the ASME Boiler and Pressure Vessel Code (hereafter called the Code). Section XI of the Code specifies code-acceptable repair methods for flaws that exceed code acceptance limits in piping that is in service. A code repair is required to restore the structural integrity of flawed code piping, independent of the operational mode of the plant when the flaw is detected. Those repairs not in compliance with Section XI of the Code are non-code repairs. However, the required code repair may be impractical for a flaw detected during plant operation unless the facility is shut down. Pursuant to 10 CFR 50.55a(g)(6)(i), the Commission will evaluate determinations of impracticality and may grant relief and may impose alternative requirements. Generic Letter 90-05, entitled "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping," dated June 15, 1990, provides guidance for the staff in evaluating relief requests submitted by licensees for temporary non-code repairs of Code Class 3 piping. The Commission may grant relief based on a staff evaluation considering the guidance in Generic Letter 90-05.

Licensee's Relief Request

By letter dated February 27, 1991, Northern States Power Company (the licensee) requested relief from code repair requirements of certain Code Class 3 piping at Prairie Island Nuclear Generating Plant, Units 1 and 2. A pinhole leak was detected in the Code Class 3 moderate energy Cooling Water System Loop A during plant operation and, subsequently, the licensee found indications of flaws below allowable minimum wall thickness in Cooling Water Loop B. However, no leakage was identified in Loop B. The licensee had determined that conformance with code repair requirements was impractical.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee submitted a relief request to the Commission. The subject piping is 24 inches in diameter, fabricated from ferritic steel (ASTM A-106, Grade B). The licensee proposed not to apply a patch to the Loop A leaking pipe, and for Loops A and B the licensee will

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monitor the leakage or the presence of leakage weekly. In accordance with Generic Letter 90-05, the integrity of the piping will be verified once per three months by nondestructive evaluation (NDE) and additional inspections will be performed.

II. EVALUATION OF RELIEF REQUEST

Code Requirement

Article IWA-4000 of Section XI of the Code specifies the Code repair procedures.

Code Relief Request

Relief is requested from performing a code repair for the flaw detected during plant operation in Code Class 3 piping.

Basis for Relief

Code repair requirements are impractical unless the facility's Units 1 and 2 are shut down.

Proposed Alternative

The licensee proposed to utilize the guidance in Generic Letter 90-05 to perform the following:

LOOP A

1. The structural integrity of the pipe has been verified by analysis. No patch will be applied to the pipe. The leakage will be collected and routed to a nearby floor drain. This allows continuous monitoring of the leakage rate.
2. A qualitative assessment of leakage will be performed weekly by a walkdown. The integrity of the pipe will be verified once per three months by NDE (typically ultrasonic (UT)), in accordance with Generic Letter 90-05. This inspection was performed as scheduled on January 24, 1991. There was no detectable increase in any flaw size.
3. Generic Letter 90-05 requires five additional inspections of areas that are both accessible and susceptible to microbiologically influenced corrosion (MIC). These inspections were completed. One additional area with indications below allowable minimum wall thickness was discovered.

LOOP B

1. The structural integrity of the pipe has been verified by analysis. No through wall leakage was identified.
2. A qualitative assessment of leakage will be performed weekly by a walkdown. The integrity of the pipe will be verified once per three months by NDE (typically UT), in accordance with Generic Letter 90-05. This inspection was performed as scheduled on January 24, 1991.

3. As described for Loop A, one of the five areas of the augmented inspection identified additional areas of MIC. Five additional areas (for a total of 10) were then inspected. None of these areas had indications below allowable minimum wall thickness.

Staff Evaluation and Conclusions

The staff has determined that code repair requirements in this case are impractical, as defined in Generic Letter 90-05. Compliance with the code repair requirements would place a burden on the licensee because the applicable technical specification limiting condition for operation action statement and the time necessary to complete the code repair will necessitate that the facility is in a two-unit outage. Furthermore, the licensee has committed to the guidance provided in Generic Letter 90-05 which will reasonably assure structural integrity and protect public health and safety. Accordingly, the staff concludes that granting relief where code requirements are impractical and imposing alternative requirements are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest, given due consideration to the burden upon the licensee and facility that could result if the code requirements were imposed on the facility. Pursuant to 10 CFR 50.55a(g)(6)(i) and consistent with the guidance in Generic Letter 90-05, relief is granted until no later than the scheduled 1992 two-unit refueling outage. During the outage as discussed above, the subject piping must be code repaired.