



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 87 TO FACILITY OPERATING LICENSE NO. DPR-22

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

1.0 INTRODUCTION

By letter dated July 7, 1993, the Northern States Power Company (the licensee) requested an amendment to the Technical Specifications (TS) appended to Facility Operating License No. DPR-22 for the Monticello Nuclear Generating Plant. The proposed amendment would change coolant leakage monitoring frequency in accordance with the guidance given in Supplement 1 to Generic Letter 88-01, "NRC Position on Intergranular Stress Corrosion Cracking (IGSCC) in BWR Austenitic Stainless Steel Piping," and NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4."

2.0 BACKGROUND

Requirements governing reactor coolant system leakage detection were added to the Monticello plant TS in License Amendments 14 and 17, dated December 10, 1982 and April 18, 1983, respectively. License Amendment 14 was issued as part of the corrective actions and justification for returning the Monticello Nuclear Plant to power following a Confirmatory Action Letter issued by the staff on October 19, 1982. The October 19, 1982, Confirmatory Action Letter was issued regarding the proposed corrective actions for crack indications found in the welds on the Monticello Plant recirculation system. Since that time, the Monticello Plant has either replaced piping susceptible to IGSCC in the recirculation system, the residual heat removal system, and the core spray system with materials resistant to IGSCC, or protected the piping with a cladding of resistant weld metal. To further reduce susceptibility to IGSCC, a hydrogen water chemistry system was placed in operation in 1988. As a result of these modifications the potential for IGSCC has been greatly reduced.

In 1988, the Commission issued Generic Letter 88-01. This Generic Letter provided revised staff positions to minimize and control IGSCC in BWR piping systems made of austenitic stainless steel that is 4 inches or larger in nominal diameter and contains reactor coolant at a temperature above 200°F. Generic Letter 88-01 required that plant TS related to leakage detection would conform to the staff position on leak detection included in the Generic Letter.

In the licensee's July 28, 1988, response to Generic Letter 88-01, the licensee confirmed that its plant TS conformed to the NRC staff position on reactor coolant leak detection. Subsequently, the NRC issued Supplement 1 to Generic Letter 88-01 and NUREG-1433, in which the NRC provided revised guidance for monitoring reactor coolant system leakage. The revised guidance ensures means are available for detecting reactor coolant system leakage while reducing unnecessary hardship on plant operators and the potential for undesirable plant transients due to unnecessary plant shutdowns.

3.0 EVALUATION

The proposed amendment would make changes to TS 3.6.D, "Primary System Boundary, Coolant Leakage," and the corresponding surveillance requirements. Limiting Condition for Operation 3.6.D.5 specifies requirements for operability of leakage measurement instruments associated with floor and equipment drain sumps and operability of the drywell particulate radioactivity monitoring system. The limiting condition prescribes actions to be taken when those instruments are inoperable. The amendment would add a clause to make the operability requirement applicable only when irradiated fuel is in the reactor and reactor water temperature is above 212°F. With regard to leakage measurement instruments, the amendment would add a requirement that manual leak rate measurements be made once per 12 hours. The amendment would require that the instruments be restored to operable status within 30 days or else shutdown would be required. In addition, the proposed amendment would create a new section 3.6.D.6 to address operability requirements for the drywell particulate radioactivity monitoring system. The amendment would require an analysis of grab samples of the primary containment once per shift not to exceed 12 hours.

Surveillance requirement 4.6.D.1.a. for coolant leakage would be amended to require that unidentified and identified leakage rates be measured once per shift not to exceed 12 hours.

Surveillance requirement 4.6.D.2.b. would be revised to require performance of a sensor check for the primary containment sump leakage measurement system once per shift, not to exceed 12 hours.

The staff's review of the above changes is provided below.

3.1 Operability of Leakage Measurement Instruments Associated with Sumps - Operability Requirements for Drywell Particulate Radioactivity Monitoring System

The revised Limiting Conditions for Operation requirements for inoperability of a sump leak rate measurement instrument and the drywell particulate radioactivity monitoring system are acceptable based on the multiple forms of leakage detection that are still available. Determination of the coolant system leakage during periods when the sump leakage rate measurement instrument is inoperable can be accomplished by manually pumping the sump or by observation of the sump level change, using indications that are readily available to the operating staff.

These instruments have an accuracy which is suitable for detecting changes in reactor coolant system leakage consistent with specified leakage limits. The 12-hour interval for manual leak rate determination or grab sample analysis provides periodic information that is adequate to detect leakage. The 30-day completion time for restoration of the sump leakage measurement instrument or the drywell particulate radioactivity monitoring system recognizes that at least one other form of leakage detection is available.

Adding a clause making the applicability requirement applicable only when irradiated fuel is in the reactor and water temperature is above 212°F is acceptable, because the action required when the leakage measurement instruments are inoperable is to shut down the reactor and reduce reactor water to less than 212°F, and the Limiting Condition for Operation is not applicable when the reactor does not contain irradiated fuel.

3.2 Leakage Surveillance Program

The frequency of recording identified and unidentified leakage rates once per shift not to exceed 12 hours is in accordance with the guidance supplied in Supplement 1 of Generic Letter 88-01, and NUREG-1433.

3.3 Primary Containment Sump Leakage Measurement System Sensor Check

Leakage measurement system sensor checks once per shift, not to exceed 12 hours, are consistent with staff guidance in NUREG-1433, specifically under Surveillance Requirement 3.4.6.1.

All the proposed changes are in accordance with the guidance supplied in either Supplement 1 of Generic Letter 88-01, and/or NUREG-1433, and are therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Minnesota State official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration and there has been no public comment on such finding (58 FR 41507). Accordingly, the amendment meets the eligibility criteria for

categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: C. Bajwa

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