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Northern States Power Company

January 28, 1997

Monticello Nuclear Generating Plant
2807 West Hwy 75
Monticello, Minnesota 55362-9637US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 2055510 CFR Part 50
Section 50.90MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22Revision No. 1 to License Amendment Request Dated January 23, 1997
Update of Design Basis Accident Containment Temperature and Pressure Response

Attached is a revision to our January 23, 1997 request for an amendment to the Technical Specifications, Appendix A of the Operating License for the Monticello Nuclear Generating Plant. This revision is submitted in accordance with the provisions of 10 CFR Part 50, Section 50.90. The purpose of this revision is to:

- 1) Augment the No Significant Hazards Considerations Evaluation with additional information.
- 2) Formally transmit page A-2 of the original January 23, 1997 License Amendment Request. This page was inadvertently omitted from several copies of the original distribution.

This submittal contains no new NRC commitments, nor does it modify any prior commitments.

Please contact Mr Samuel Shirey, Sr Licensing Engineer, at (612) 295-1449 if you require additional information related to this request.

William J Hill
Plant Manager
Monticello Nuclear Generating Plantc: Regional Administrator-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
State of Minnesota
Attn: Kris Sanda
J Silberg, Esq

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Attachments: 1) Affidavit to the US Nuclear Regulatory Commission
2) Revised No Significant Hazards Considerations Evaluation
3) Page A-2 of License Amendment Request dated January 23, 1997

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UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

DOCKET NO. 50-263

REQUEST FOR AMENDMENT TO
OPERATING LICENSE DPR-22

REVISION NO. 1 TO LICENSE AMENDMENT REQUEST DATED JANUARY 23, 1997

Northern States Power Company, a Minnesota corporation, is submitting Revision No. 1 to License Amendment Request dated January 23, 1997. This revision expands the No Significant Hazards Considerations Evaluation contained in the original application.

This letter contains no restricted or other defense information.

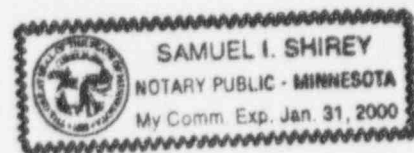
NORTHERN STATES POWER COMPANY

By William J Hill
William J Hill
Plant Manager
Monticello Nuclear Generating Plant

On this 29th day of January, 1997 before me a notary public in and for said County, personally appeared William J Hill, Plant Manager, Monticello Nuclear Generating Plant, and being first duly sworn acknowledged that he is authorized to execute this document on behalf of Northern States Power Company, that he knows the contents thereof, and that to the best of his knowledge, information, and belief the statements made in it are true and that it is not interposed for delay.

Samuel I. Shirey

Samuel I Shirey
Notary Public - Minnesota
Sherburne County
My Commission Expires January 31, 2000



MONTICELLO NUCLEAR GENERATING PLANT

Revision No. 1 to License Amendment Request Dated January 23, 1997

Pursuant to 10 CFR Part 50, Sections 50.59 and 50.90, the holders of Operating License DPR-22 hereby submit the following revision to Monticello License Amendment Request dated January 23, 1997.

Revision

Replace the No Significant Hazards Considerations Evaluation contained in the original January 23, 1997 License Amendment Request with the following evaluation:

No Significant Hazards Considerations:

The Commission has provided standards (10 CFR Section 50.92) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

After reviewing this proposed amendment we have concluded that:

- 1) The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated

These changes do not affect the physical configuration of the plant or how it is operated. These changes clarify plant operating modes that have previously been analyzed and found to be acceptable under accident conditions. The proposed changes do not introduce new accident scenarios.

These changes have no impact on the protection of the health and safety of the public. There is a small reduction in margin, as discussed in (3) below, resulting from a new analysis of loss of coolant accident containment temperature and pressure response.

The changes clarify the Technical Specification Bases to correctly describe the design basis for containment spray/cooling equipment following a loss of coolant accident. The original Monticello FSAR identified the most degraded condition for containment spray/cooling equipment availability. This condition could occur following a postulated loss of offsite power and loss of one diesel generator. One RHR pump and one RHR service water pump would be

available under these conditions. An update of the containment pressure and temperature analysis following completion of the Mark I Containment Long Term Program in the early 1980's inadvertently assumed the availability of two RHR pumps and two RHR service water pumps. The Bases of the Monticello Technical Specifications also appears to be written based on the availability of two RHR pumps and two RHR service water pumps for containment spray/cooling.

This error in the containment pressure and temperature analysis was identified during the Monticello design basis reconstitution program and was corrected by a revised analysis. This analysis is being submitted for NRC Staff review and approval in conjunction with the Technical Specification changes proposed in this License Amendment Request.

The proposed changes will correct the Bases of the Monticello Technical Specifications to clearly describe the design basis of the plant for the post-LOCA containment spray/cooling function. One RHR pump and one RHR service water pump are fully adequate for this function.

- 2) The proposed amendment will not create the possibility of a new or different kind of accident from any accident previously analyzed

These changes do not affect the physical configuration of the plant or how it is operated. Clarification of the Technical Specification Bases to correctly describe the design basis of the containment spray/cooling system cannot cause the possibility of a new or different kind of accident from any previously evaluated.

This issue involves correcting the Technical Specification Bases to correctly describe the design basis of the Monticello plant for performing the post-LOCA containment spray/cooling function. Following this change, the Technical Specifications as well as the USAR will be consistent with the original Monticello FSAR description of the minimum available equipment for containment spray/cooling and the corrected containment temperature and pressure response analysis.

- 3) The proposed amendment will not involve a significant reduction in the margin of safety

The proposed changes do not affect the physical configuration of the plant or how it is operated.

The new analysis generally uses input assumptions which conservatively maximize calculated containment pressures and temperature. Different decay heat models are used in the new analysis, however, substantial margins of safety continue to be demonstrated. As such, the proposed changes do not involve a significant reduction in the margin of safety.

A comparison of the containment long-term pressure and temperature analysis in the original FSAR, the analyses previously reviewed by the NRC Staff (NEDO-30485), and the most recent analysis completed by General Electric (NEDO-32418) is shown below:

	Original FSAR Analysis Most Degraded Containment Heat Removal Conditions	NEDO-30485 December, 1983	NEDO-32418 December, 1994
No. RHR Pumps	1	2	1
No. RHR Service Water Pumps	1	2	1
Decay Heat Model for Long Term Containment Cooling Analysis ($t \geq 10$ minutes)	May-Witt	May-Witt	ANS 5.1 (1979)
Secondary ($t \geq 10$ minutes) Wetwell Peak Pressure (psig)	20.3	32.2	30.6
Maximum Suppression Pool Temperature ($^{\circ}\text{F}$)	190	182	184

The maximum suppression pool temperature reported in NEDO-32418 is 2°F higher than previously reviewed by the NRC Staff. This 2°F increase has been evaluated and found to be acceptable. Emergency core cooling system (ECCS) pump net positive suction head, wetwell attached piping, and environmental conditions in the ECCS pump rooms have all been evaluated and found to be acceptable for the slightly higher suppression pool temperature.

The ANS 5.1 (1979) model yields lower, more realistic, core heat generation values than the May-Witt model. ANS 5.1 (1979) was developed by combining data from many experiments and calculations. It provides an improved representation of decay heat generation while still treating uncertainty in the experimental data in a conservative manner. The May-Witt model is more than 30 years old and lacks the rigorous analytical origins on which ANS 5.1 (1979) is based. The May-Witt model predates much of the experimental data and powerful computer-based analytical tools which were used in the more recent development of the ANS 5.1 (1979) model.

The 2°F increase in suppression pool temperature and the use of an updated decay heat model in the revised containment pressure and temperature analysis do not significantly reduce margins of safety.

Based on the above findings, we have determined that the proposed amendment will not involve a significant hazards consideration.

Monticello Nuclear Generating Plant

Revision No. 1 to License Amendment Request Dated January 23, 1997

Insert the attached page A-2 in Monticello License Amendment Request dated January 23, 1997 if this page is missing from your copy.

Reason for Change:

Background

As discussed in Section 5.2.3.3 and Figures 5-2-14 through 5-2-16 of the original Monticello Final Safety Analysis Report (FSAR), availability of one residual heat removal (RHR) pump and one residual heat removal service water (RHRSW) pump represents the most degraded condition for long term containment heat removal following a loss of coolant accident. This condition occurs on loss of off-site power combined with loss of one diesel generator. The load rating of the remaining diesel generator allows long term operation of only one RHRSW pump and one RHR pump for suppression pool cooling and one Core Spray pump for makeup to the reactor.

Following the completion of the Mark I Containment Program, General Electric updated the FSAR containment pressure and temperature response analysis to be consistent with the Monticello Mark I Plant Unique Load Definition. The results of the revised analysis were contained in NEDO-30485, "Monticello Design Basis Accident Containment Pressure and Temperature Response for FSAR Update, December, 1983. NEDO-30485 was incorporated in the USAR (which replaced the FSAR in 1982) and was submitted to the NRC to support Monticello License Amendment Request dated May 1, 1986 related to containment leakage testing. The amendment request was approved by the NRC and issued as Amendment No. 55 to the Monticello Operating License on November 25, 1987.

In 1992, as part of the Monticello Configuration Management Improvement Program, inconsistencies were discovered in the assumptions used in NEDO-30485 with respect to the number of operable RHR and RHRSW pumps. A Follow-On Item (FOI) was assigned for follow up and assessment of this problem. Assessment confirmed that the NEDO-30485 analysis assumed the availability of two RHR pumps and two RHRSW pumps for containment cooling. General Electric was contacted and requested to revise this analysis.

The revised General Electric analysis, "Monticello Nuclear Generating Plant Design Basis Accident Containment Pressure and Temperature Response for USAR Update," NEDO-32418, December, 1994, demonstrated ample margins to containment design limits with one RHR pump and one RHRSW pump available for long-term containment heat removal.

Section 5.2.3.3 of the Monticello USAR was updated with the results of NEDO-32418 and reported to the NRC in the periodic report of changes, tests and experiments in accordance with 10 CFR Part 50.59 on April 20, 1995.

Safety System Operational Performance Inspection of RHR System

A Safety System Operational Performance Inspection (SSOPI) of the Monticello Residual Heat Removal (RHR) System was recently completed by an NRC Region III inspection team. The exit meeting for this inspection was held on January 8, 1997. At this meeting NRC personnel stated that they had identified potential violations of NRC requirements related to the containment pressure and temperature analysis described in the Technical Specification Bases and in the Monticello Updated Safety Analysis Report (USAR).