Northern States Power Company

Monticello Nuclear Generating Plant
2807 West Hwy 75
Monticello, Minnesota 55362-9637

May 5, 1997

10 CFR Part 50
Section 50.90

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

MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Supplementary Information to
Revision One to License Amendment Request Dated July 26, 1996
Reactor Coolant Equivalent Radioiodine Concentration and
Control Room Habitability (TAC M96256)

Monticello submittal dated July 26, 1996 requested that the Operating License be amended and proposed changes to the Technical Specifications, Appendix A of the Operating License, for the Monticello Nuclear Generating Plant. The proposed amendment changes Technical Specification sections 3.6.C, Coolant Chemistry, and 3/4.17.B, Control Room Emergency Filtration System. In addition, changes were submitted for the bases for these sections. By submittal dated April 11, 1997, revision one to the July 26, 1996 license amendment proposed to revise the reactor coolant radioiodine concentration specified in Technical Specification section 3.6.C, Coolant Chemistry, in response to evaluations performed of the radiological consequences of a postulated line break in the Reactor Water Cleanup (RWCU) system.

As stated in the April 11, 1997 submittal, the atmospheric dispersion (X/Q) factors used in the analyses provided in Exhibit D and Exhibit E of the April 11th submittal differ from those previously reviewed by the NRC staff and the methodology used to establish the atmospheric dispersion factors would be provided if requested by the staff. During a phone conversation conducted between members of the NRC staff and the Monticello plant staff on April 28, 1997, the staff requested that the report on which the atmospheric dispersion factors are based be provided for staff review as well as the Monticello site meteorological data used to derive the atmospheric dispersion factors. Enclosure 1 to this letter is a copy of the report "Control Room and Offsite Atmospheric Dispersion Factors," Calculation 10040-U30-M01, Revision 0, excluding appendices and attachments. Enclosure 2 to this letter is a hard copy of the Monticello 1991 site meteorological data. A computer diskette containing the data provided in Enclosure 2 in an electronic ASCII text format has been transmitted to the NRC-NRR Monticello Project Manager for use by the NRC staff as requested.

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The atmospheric dispersion factors provided in the April 11th submittal and discussed in Enclosure 1 to this letter were determined using the 1991 Monticello site meteorological data and the methodology of NUREG/CR-5055, *Atmospheric Diffusion for Control Room Habitability Assessments*, by J.V. Ramsdell, Pacific Northwest Laboratory, 1988; and Regulatory Guide 1.145, *Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants*, Revision 1, USNRC November 1982. The determination of the control room (X/Q) factors used the methodology of NUREG/CR-5055 for ground release from the Reactor Building plenum and the Turbine Building, and used the elevated stack release model from Regulatory Guide 1.145 for elevated releases from the plant Offgas Stack. The determination of offsite (X/Q) factors used the methodology of Regulatory Guide 1.145 for ground release from the Reactor Building plenum and the Turbine Building, and for the elevated releases from the plant Offgas Stack. The radiological consequence analysis provided in the April 11th submittal using the proposed Technical Specification value of 0.25 μCi/gm dose equivalent radioiodine and the atmospheric dispersion factors established by Enclosure 1 determined that the offsite dose consequences due to the evaluated postulated events to be less than 10% of the guidelines provided in 10 CFR Part 100 and within the guidelines of 10 CFR Part 50, General Design Criterion 19 for the control room operators.

The bases for the Technical Specifications state that radioiodine concentration can change rapidly in the reactor coolant during transient reactor operations such as reactor shutdown, reactor power changes and reactor startup if failed fuel is present. This phenomena is referred to as iodine spiking. The Monticello Technical Specification requirements established in specification 3.8/4.8.B "Gaseous Effluents" provide conservative limits on gaseous effluents consistent with the guidelines established in 10 CFR 50, Appendix I, "Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion 'As Low as Reasonably Achievable' for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents." The gaseous effluents subject to the requirements of specification 3.8/4.8.B are directly related to the reactor coolant radioiodine concentration. Maintaining off-gas releases to within acceptable values provides adequate operating constraints such that it is unlikely for transient reactor operations to result in radioiodine concentrations greater than the proposed Technical Specification value. Based upon Monticello's engineering judgment it is unlikely that the postulated line break in the RWCU system will result in a reactor transient leading to a rapid increase in reactor coolant radioiodine concentration.

While Monticello feels that a iodine spike is unlikely, a preliminary evaluation of the radiological consequences of the postulated RWCU line break coincident with a postulated spike in the reactor coolant dose equivalent radioiodine concentration has been performed. This additional evaluation determined that the offsite dose consequences due to the evaluated postulated event to be less than the guidelines provided in 10 CFR Part 100 and within the guidelines of 10 CFR Part 50, General Design Criterion 19 for the control room operators. The evaluation of the postulated radioiodine spike used the radioiodine spike concentration provided in item II.B of Table 15.6-16 provided in the "ABWR Standard Safety Analysis Report," GE Report No. 23A6100, Revision 4, March 1994 (PDR ADOCK Accession No. 9404110236), with the postulated release corrected to account for steam flashing of the liquid release, radioiodine

plateout on Reactor Building surfaces, dilution of the reactor coolant radioiodine concentration due to continued reactor vessel inventory make-up, and dilution of the airborne radioiodine in the Reactor Building.

The information contained herein does not alter the Monticello finding of no significant hazards considerations provided in the submittal dated April 11, 1997 performed in accordance with 10 CFR 50.91 using the standards of 10 CFR 50.92, nor does it alter the environmental assessment provided in the April 11, 1997 submittal. This letter contains no new NRC commitments, nor does it modify any prior commitments.

Please contact Marv Engen at (612) 295-1291 if you require further information.

William J Hill

William J Hill
Plant Manager
Monticello Nuclear Generating Plant

c: Regional Administrator - III, NRC
NRR Project Manager, NRC
Sr Resident Inspector, NRC
State of Minnesota, Attn: Kris Sanda

Attachments: Affidavit to the US Nuclear Regulatory Commission

Enclosures: (1) "Control Room and Offsite Atmospheric Dispersion Factors," Calculation 10040-U30-M01, Revision 0, excluding appendices and attachments.

(2) Monticello Nuclear Generating Plant 1991 Meteorological Data

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT DOCKET NO. 50-263

SUPPLEMENTARY INFORMATION TO
REVISION ONE TO LICENSE AMENDMENT REQUEST DATED JULY 26, 1996
REACTOR COOLANT EQUIVALENT RADIOIODINE CONCENTRATION AND
CONTROL ROOM HABITABILITY (TAC M96256)

Northern States Power Company, a Minnesota corporation, hereby provides supplementary information related to submittal dated April 11, 1997, "Revision One To License Amendment Request Dated July 26, 1996, Reactor Coolant Equivalent Radioiodine Concentration and Control Room Habitability." 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 5th day of May 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 to the best of his knowledge, information, and belief the statements made in it are true and that it is not interposed for delay.

Marvin R Engen
Notary Public - Minnesota
Sherburne County
My Commission Expires January 31, 2000

MARVIN RICHARD ENGEN
NOTARY PUBLIC - MINNESOTA
My Comm. Exp. Jan. 31, 2000

Enclosure 1 "Control Room and Offsite Atmospheric Dispersion Factors,"
Calculation 10040-U30-M01, Revision 0, excluding appendices and attachments.