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Northern States Power Company

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(31)

March 30, 1982

NUMBER PR 50
PROPOSED RULE
(46 FR 62281)Director
Office of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555MONTICELLO NUCLEAR GENERATING PLANT
Docket No. 50-263 License No. DPR-22

Request for Exemption from the Schedule Requirements
of 10 CFR Part 50, Section 50.44, Standards for Combustible
Gas Control Systems in Light Water Reactors



Section 50.44 of 10 CFR Part 50 became effective on November 27, 1978. This section established the requirements for combustible gas control systems in light water reactors. It was published as a final rule in the October 27, 1978 Federal Register. No specific schedule was provided in the rule for backfitting older plants with combustible gas control systems meeting the new requirements.

Paragraph (c) of Section 50.44 was revised by the Commission in a final rule published in the Federal Register on December 2, 1981. The rule became effective on January 4, 1982. Paragraph (c) requires, as a minimum, the installation of either an internal recombiner or the capability to install an external recombiner following the start of an accident. This modification is required to be completed by the end of the first scheduled outage beginning after July 5, 1982 which is of sufficient duration to complete the work.

The purpose of this letter is to request, in accordance with the provision of 10 CFR Part 50, Section 50.12, an exemption from the requirements of 10 CFR Part 50, Section 50.44, including revisions to paragraph (c), until December 31, 1983. A combustible gas control system utilizing two permanently installed external recombiners is currently being installed. This system is intended to comply fully with the requirements of 10 CFR Part 50, Section 50.44. Additional time is needed to complete engineering, procurement, installation, and testing of this fully redundant and permanently installed recombiner system. A summary of the development of the combustible gas control issue at Monticello and a description of our plans for complying with Section 50.44 is provided in support of our request.

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On September 8, 1970 the Monticello Provisional Operating License was issued by the AEC. Containment inerting was required by the Technical Specifications. The plant has always operated with an inerted containment except for brief periods for inerting and deinerting operations permitted by the Technical Specifications. However, no safety grade system for control of radiolytic or corrosion generated oxygen was believed necessary and no combustible gas control system was specified over and above the normal containment atmosphere control equipment (nitrogen purge and makeup equipment and containment ventilation equipment).

On June 15, 1972 Northern States Power Company submitted an application for conversion of the provisional operating license to a full term operating license at Monticello. A hydrogen generation analysis using the assumptions of Safety Guide 7 (March 10, 1971) was submitted. This was a more conservative analysis than presented in the FSAR. A commitment to study the feasibility of augmenting the containment atmosphere control system for oxygen control after a loss of coolant accident was made.

On February 5, 1973 the AEC Staff issued the SER for the Monticello full term operating license. A requirement to submit a program to accomplish improvements to containment post-accident combustible gas control systems was contained in this report. On September 19, 1974 a meeting was held with the AEC Staff to discuss NSP's proposals for combustible gas control system improvements.

On October 21, 1976 the Commission published a proposed rule on containment combustible gas control requirements. On November 19, 1976 NSP submitted comments on the proposed rule. On October 27, 1978 the final rule was published. No schedule was provided in the rule for backfitting older plants with combustible gas control systems meeting the requirements of the rule. Either recombiners, a repressurization system, or a purge and vent system would satisfy this regulation at Monticello based on the date the plant's notice of hearing was published and the results of purge dose calculations. Containment inerting was not required under this rule.

On June 6, 1979 NSP issued a purchase order to Quadrex Corporation to begin an engineering feasibility study of methods to comply with the combustible gas control rule. On December 10, 1979 NSP issued a purchase order for two Rockwell BWR recombiners as a result of recommendations contained in the Quadrex study. Approximately two years are required between placing an order for this equipment and delivery on site. Engineering, procurement, and installation of piping are currently in progress with completion scheduled by the end of 1983. A containment hydrogen and oxygen monitoring system required by NUREG-0737, Item II.F.1.6, is also being installed with an anticipated completion date of June 1, 1982. Modifications to assure a mixed containment atmosphere are currently being evaluated. Modifications to assure mixing will be completed by December 31, 1983 if needed.

The Monticello full term operating license was issued by the Commission on January 9, 1981. No additional requirements related to combustible gas control were imposed and no open issues were identified by the hearing board.

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On January 4, 1982 the Commission's interim requirements related to hydrogen control became effective. This rule requires inerting of Mark I and Mark II containments and an internal recombiner or the ability to connect an external recombiner in all plants not currently provided with recombiners. A completion schedule was established which requires the modification to be completed by the first outage beginning after July 5, 1982 which is of sufficient duration to complete the work. Monticello's recombiner installation will exceed these requirements; therefore, a schedule exemption is necessary.

As noted earlier, Monticello has always operated with an inerted containment. Oxygen is maintained well below the Technical Specification limit of five weight percent. This effectively eliminates any concern with hydrogen generated from a metal water reaction of any magnitude. Recently a detailed operating procedure was issued and included in the Monticello Operations Manual for control of radiolytic and corrosion oxygen which very conservative calculations show may exceed the combustible limit 14 hours after an accident. Components of the existing containment atmosphere control and standby gas control systems are used in this procedure. While not redundant or safety grade, this equipment provides the capability to maintain oxygen below the combustible limit in the event of significant radiolytic or corrosion generated oxygen following an accident. The dose rate criteria of NUREG-0737, Item II.B.2, may be exceeded under some conditions, however, in operating this equipment. We believe that this is an acceptable substitute for a system meeting the requirements of Section 50.44 for the short period required to complete the recombiner installation.

Attachment (1) is a system description for the Monticello combustible gas control system prepared by the project engineer, Nutech, Incorporated. Attachment (2) is a preliminary schedule for this project. As noted in these attachments, this is an extremely complex modification requiring extensive engineering and construction. Lead times for equipment procurement are a significant factor in our schedule. We believe December 31, 1983 is a realistic completion date justified by the scope of the project.

Accordingly, we are at this time requesting the foregoing exemption from the requirements of 10 CFR Part 50, Section 50.44, until December 31, 1983. Please contact us if you have any questions related to this request or if we can furnish additional information related to this issue.



L O Mayer, PE
Manager of Nuclear Support Services

LOM/DMM/bd

cc: Secretary of the Commission (original and 2 copies)
Regional Admin-III, NRC
NRR Project Manager, NRC
Resident Inspector, NRC
G Charnoff

Attachment

UNITED STATES NUCLEAR REGULATORY COMMISSION

NORTHERN STATES POWER COMPANY

MONTICELLO NUCLEAR GENERATING PLANT

Docket No. 50-263

LETTER DATED MARCH 30, 1982
REQUEST FOR EXEMPTION FROM THE SCHEDULE REQUIREMENTS OF 10 CFR PART 50, SECTION
50.44, STANDARDS FOR COMBUSTIBLE GAS CONTROL SYSTEMS IN LIGHT WATER REACTORS

Northern States Power Company, a Minnesota corporation, by this letter dated
March 30, 1982 hereby submits a request for exemption from the requirements of
10 CFR Part 50, Section 50.44.

This request contains no restricted or other defense information.

NORTHERN STATES POWER COMPANY

By

L. O. Mayer
L O Mayer

Manager of Nuclear Support Services

On this 30th day of March, 1982, before me a notary public in and
for said County, personally appeared L O Mayer, Manager of Nuclear Support Services,
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.

Betty J. Dean

