

December 11, 1987

Docket Nos. ~~50-63~~ 50-263
and ~~50-306~~ *pd*

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

Dear Mr. Musolf:

SUBJECT: EXEMPTION REQUEST OF AUGUST 18, 1987 - REQUIREMENTS OF 10 CFR 50.62, PARAGRAPH(c)(4), MINIMUM FLOW CAPACITY AND BORON CONTENT FOR THE STANDBY LIQUID CONTROL SYSTEM - MONTICELLO NUCLEAR GENERATING PLANT

In your letter dated August 18, 1987, you requested an exemption from the requirements of 10 CFR §50.62, paragraph(c)(4), which states in part that each boiling water reactor must have a standby liquid control system (SLCS) with a minimum flow capacity and boron content equivalent in control capacity to 86 GPM of 13 weight percent sodium pentaborate solution.

In your exemption request, you asked that you be allowed to vary certain system parameters in accordance with a formula which would result in a lower injection flow rate of the borated solution than that which is required by 10 CFR §50.62. You also explained the circumstances under which the exemption becomes necessary.

The Commission has granted your request as described in the enclosed Exemption. A copy of the Exemption is being filed with the Office of the Federal Register for publication.

Sincerely,

/s/

Dominic C. DiIanni, Project Manager
Project Directorate III-3
Division of Reactor Projects

Enclosure:
Exemption
cc: w/enclosure
See next page

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Mr. D. M. Musolf
Northern States Power Company

Monticello Nuclear Generating Plant

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	}	
NORTHERN STATES POWER COMPANY	}	Docket No. 50-263
Monticello Nuclear Generating Plant	}	

EXEMPTION

I.

The Northern States Power Company (the licensee) is the holder of Facility Operating License No. DPR-22 which authorizes operation of the Monticello Nuclear Generating Plant. The license provides, among other things, that it is subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

The facility incorporates a boiling water reactor at the licensee's site located in Wright County, Minnesota.

II.

By letter dated August 18, 1987, the licensee requested an exemption from the requirements of 10 CFR §50.62(c)(4), which establishes the minimum injection flow rate and the boron concentration for the standby liquid control system (SLCS).

Specifically, 10 CFR §50.62(c)(4) requires that each boiling water reactor must have a SLCS with minimum flow capacity equivalent in control capacity to 86 gallons per minute (GPM) with a boron concentration of 13 weight percent (w/o) sodium pentaborate. The licensee requests an exemption from this requirement to permit use of a minimum flow rate of 26 GPM and an available sodium pentaborate concentration ranging from 13.7% to 18 w/o depending on the volume

in the existing SLCS storage tank. The B10 content of the boron in the dissolved sodium pentaborate solution would be enriched above the natural isotopic composition.

The requirement established by the regulation was intended to provide for prompt injection of negative reactivity into a boiling water reactor pressure vessel in the event of an anticipated transient without scram (ATWS) event. The reactor vessel size used to establish the required flow rate of 86 GPM and the sodium pentaborate concentration of 13 w/o was the large 251-inch diameter vessel used in the BWR/5 and BWR/6 designs. The Monticello reactor has a much smaller 206-inch diameter vessel. For the Monticello reactor, a lesser flow rate, following the formula proposed by the licensee, will provide a negative reactivity injection in an ATWS event equivalent to that called for by the regulation for the larger 251-inch diameter boiling water reactor vessel. See Generic Letter 85-03, "Clarification of Equivalent Control Capacity for Standby Liquid Control Systems," January 28, 1985.

III.

In this case, the flow rate-boron 10 concentration relationship established by the licensee's formula will provide the equivalent level of control capacity for the smaller Monticello reactor pressure vessel as that called for by the rule based on larger reactor pressure vessels. Requiring Monticello to provide the flow rate-boron 10 concentration capacity specified by the rule is not necessary to provide adequate negative reactivity in the event of an ATWS at Monticello. Thus, the Commission's staff finds that there are special circumstances in this case which satisfy the standards of 10 CFR 50.12(a)(2)(ii). As set forth in the Safety Evaluation of Amendment No. 56 , issued

concurrently with this Exemption, the staff has determined that operation under the revised Technical Specifications governing flow rate and boron-10 concentration will not endanger public health and safety and will not be inimical to the common defense and security.

IV.

Accordingly, the Commission has determined that pursuant to 10 CFR 50.12, an exemption is authorized by law and will not present an undue risk to the public health and safety, and is consistent with the common defense and security, and hereby grants the following exemption with respect to the requirements of paragraph (c)(4) of 10 CFR §50.62.

The licensee may operate the facility with flow rate and boron concentration requirements as set forth in Sections 3.4 and 4.4 of the Monticello facility Technical Specifications.

Pursuant to 10 CFR 51.32, the Commission has determined that granting this Exemption will have no significant impact on the environment as documented in the accompanying Environmental Assessment and Finding of No Significant Impact. This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Dennis M. Crutchfield, Director
Division of Reactor Projects - III
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Dated at Bethesda, Maryland
this 11th day of December 1987.