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August 29, 1973

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Mr. Frank Karas  
Chief, Public Proceedings Staff  
Office of the Secretary of the  
Commission  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

In the Matter of Northern States Power Company  
(Monticello Nuclear Power Station)  
Docket No. 50-263

Dear Mr. Karas:

Enclosed you will find copies of (1) Order for Modification of License, Docket No. 50-263, with Appendix I and (2) Safety Evaluation of the Fuel Densification effects on the Monticello Nuclear Power Station. A third report that was filed with the Order for Modification of License is not presently available for distribution. This report, "Technical Report on Densification of General Electric Reactor Fuels" will be sent immediately upon its availability.

Sincerely,

15/  
Geoffrey P. Gitner  
Counsel for AEC Regulatory Staff

Enclosure

OFFICE ▶	OGC					
SURNAME ▶	G. Gitner/bat J. Gallo					
DATE ▶	8/29/73					

Form AEC-318 (Rev. 9-53) AECM 0240

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UNITED STATES OF AMERICA  
ATOMIC ENERGY COMMISSION

In the Matter of )  
 )  
NORTHERN STATES POWER CO. ) Docket No. 50-263  
 )  
(Monticello Nuclear Power Station, )

ORDER FOR MODIFICATION OF LICENSE

I.

The Northern States Power Co. ("the licensee") is the holder of Facility License DPR-22. License DPR-22 authorizes operation of the Monticello Nuclear Power Station, ("the plant") in Wright County, Minnesota. This license expressly provides, inter alia, that it is subject to all rules, regulations and orders of the Commission now or hereinafter in effect.

II.

On November 14, 1972, the AEC Regulatory Staff ("the Staff") issued a report entitled "Technical Report on Densification of Light Water Reactor Fuels" ("the Report"). By letter of November 20, 1972, the Staff requested the licensee to submit analyses and data specified in the report related to determining the consequences of fuel densification for normal operation of the plant, for operation of the plant during various maneuvers and transients, and under postulated accident situations, including the design basis loss-

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of-coolant accidents. On December 29, 1972, the licensee provided the requested information including, by reference, the General Electric Company Report NEDM-10735, "Densification Considerations in BWR Fuel Design and Performance" dated December, 1972. The Staff reviewed the licensee's submission as well as five additional supplements to NEDM-10735 which were submitted by the General Electric Company in response to requests for additional information from the Staff. The latest of these supplements was dated July, 1973. By letter of July 16, 1973, the Staff requested the licensee, inter alia, to furnish additional analyses regarding the calculated peak cladding temperatures during a postulated loss-of-coolant accident. On August 15, 1973, the licensee submitted the requested information including Supplement 6 to NEDM-10735.

On the basis of the Staff's review of the above identified submittals and its evaluation of fuel densification effects upon the operation of boiling water reactors which are reflected in a safety evaluation report relating to the plant dated August 24, 1973, the Staff has determined that changes in the operating conditions for the plant are necessary in order to assure that the calculated peak cladding temperature of the core of the plant following a postulated loss-of-coolant accident will not exceed 2300°F taking into account fuel densification effects as described in the Staff's safety evaluation identified above, and, therefore, that the Technical Specifications of License DPR-22

should be amended to require: (1) the immediate control of steady-state power operation so that the average linear heat generation rate of all the rods in any fuel assembly, as a function of planar exposure, at any axial location, shall not exceed the maximum average planar linear heat generation rate of 11.5 kw/ft; and (2) that during steady state power operation, the linear heat generation rate (LHGR) of any rod in any fuel assembly at any axial location shall not exceed the maximum allowable LHGR as calculated using the equation for maximum LHGR provided in Limiting Condition for Operation, section 3.5.K of the attached Appendix I.

### III.

In view of the foregoing, the Director of Regulation finds that the public health, safety, and interest require that the following Order be made effective immediately. Pursuant to the Atomic Energy Act of 1954, as amended, the Commission's regulations in 10 CFR §§ 2.204 and 50.100 and the license condition noted in Part I above

#### IT IS ORDERED THAT:

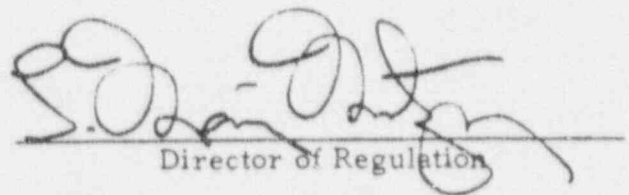
The Technical Specifications of License DPR-22 are hereby changed, to include Limiting Conditions for Operation, sections 3.5.J. and 3.5.K., and Surveillance Requirements, sections 4.5.J. and 4.5.K. attached hereto as Appendix I and the plant shall be operated immediately in accordance therewith.

Within thirty (30) days from the date of publication of this notice in the Federal Register the licensee may file a request for a hearing with respect to this Order. Within the same thirty (30) day period any other person whose interest may be affected may file a request for a hearing with respect to this Order in accordance with the provisions of 10 CFR § 2.714 of the Commission's Rules of Practice. If a request for a hearing is filed within the time prescribed herein, the Commission will issue a notice of hearing or an appropriate order.

For further details pertinent to this Order see: the Staff Technical Report on Densification of Light Water Reactor Fuels, November 14, 1972; letter to A. V. Dienhart from A. Giambusso, November 20, 1972; letter to A. Giambusso from L. O. Mayer, December 29, 1972, with enclosure General Electric topical report, Densification Considerations in BRW Fuel Design and Performance; letter to A. V. Dienhart, with enclosure the Staff's GE Model for Fuel Densification, July 16, 1973; letter to D. Zieman from L. O. Mayer, August 15, 1973; the Staff Technical Report on Densification of General Electric Reactor Fuels, August 23, 1973; the Staff Safety Evaluation of the Fuel Densification Effects on the Monticello Nuclear Power Station, August 24, 1973; all of which are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C.

Copies of these documents may be obtained upon request addressed to the  
Deputy Director for Reactor Projects, Directorate of Licensing, U. S. Atomic  
Energy Commission, Washington, D. C. 20545.

FOR THE ATOMIC ENERGY COMMISSION



Director of Regulation

Dated at Bethesda, Maryland  
this 24th day of August, 1973