

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

FEB 18 1977

Northern States Power Company  
ATTN: Mr. Leo Wachter  
Vice President  
Power Production and  
System Operation  
414 Nicollet Mall  
Minneapolis, Minnesota 55401

Docket No. 50-263  
Docket No. 50-282  
Docket No. 50-306

Gentlemen:

The enclosed IE Circular No. 77-02 is forwarded to you for information and action. If there are any questions related to your understanding of the actions indicated, please contact this office.

Sincerely,

*for* *Bliskman*  
James G. Keppler  
Regional Director

Enclosure:  
IE Circular No. 77-02

cc w/encl:  
Mr. L. R. Eliason,  
Plant Manager  
Mr. F. P. Tierney, Jr.,  
Plant Manager  
Central Files  
Reproduction Unit NRC 20b  
PDR  
Local PDR  
Anthony Roisman, Esq.,  
Attorney



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IE Circular No. 77-02  
February 18, 1977

## POTENTIAL HEAVY SPRING FLOODING

### DESCRIPTION OF CIRCUMSTANCES:

The purpose of this circular is to inform you that the National Weather Service has predicted that heavy spring flooding in the area from the Missouri River eastward is likely to occur. Ice covers most of the major river and lake systems in this area and the accumulation of ice and snow in the eastern portion has further increased the flooding potential. In some areas the potential spring flooding may equal or exceed floods of record. The degree of flooding is dependent upon the rate of warming trends, ice breakup rates and the occurrence of spring rains. The two enclosed figures from the National Weather Service indicate the principal frozen rivers and areas of greatest flood potential in the northeast and upper midwest. There will also be the possibility of flooding on the Mississippi River below Cairo, Illinois dependent upon runoff in its tributaries. The enclosed maps do not address the potential of the associated effects of ice impact and blockage or additional precipitation on flood related concerns.

### ACTION TO BE TAKEN BY LICENSEE:

It is recommended at this time that licensees receiving this circular reconsider the following items in preparation for potential flooding and the associated effects at operating facilities.

1. The potential high water level at your facility(ies) caused by runoff and/or ice jams, coupled with spring rains with respect to the site flooding conditions utilized in the design of the facility.
2. The potential consequences of ice impacts on exposed structures and facilities (such as intake structures, trash racks and traveling screens).
3. The potential for ice blockage in the form of ice blocks, frazil ice (concentration of ice crystals in the water) and/or anchor ice (bottom ice) which could hinder the supply of safety related service water.

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4. If any special barriers and/or procedures are needed to offset the conditions of 1, 2 or 3 above, these should be made ready for installation and/or implementation if the need arises. In addition, renewed attention should be given to established procedures or actions required to mitigate these conditions should they occur. Operating personnel should review procedures prior to implementation.
5. During the extreme cold weather there is also a potential for loss of transmission lines due to icing. In addition, should flooding occur when warmer weather returns the potential for loss of offsite transmission lines may be increased. Therefore you should evaluate the adequacy of diesel fuel supplies for onsite power sources. This should include consideration of whether diesel supply sources and transportation routes are vulnerable to such flooding and if there is a need for any additional onsite storage.
6. Based on experience in previous flood conditions, nonsafety related facilities or components vulnerable to flooding can cause abnormal plant operations for extended periods of time. Licensees should prepare for such situations.

At this early date, it is not possible to predict the specific time of occurrence, location, or extent of flooding or associated effects. Forecasts regarding flooding or icing can be obtained from the public service forecasters of the U. S. Weather Service Forecast Center in your state. These offices are generally open 24 hours per day. The offices (in the subject area) are advised of river conditions by River Forecast Centers located in Cincinnati, OH; Harrisburg, PA; Hartford, CT; and Kansas City, MO.

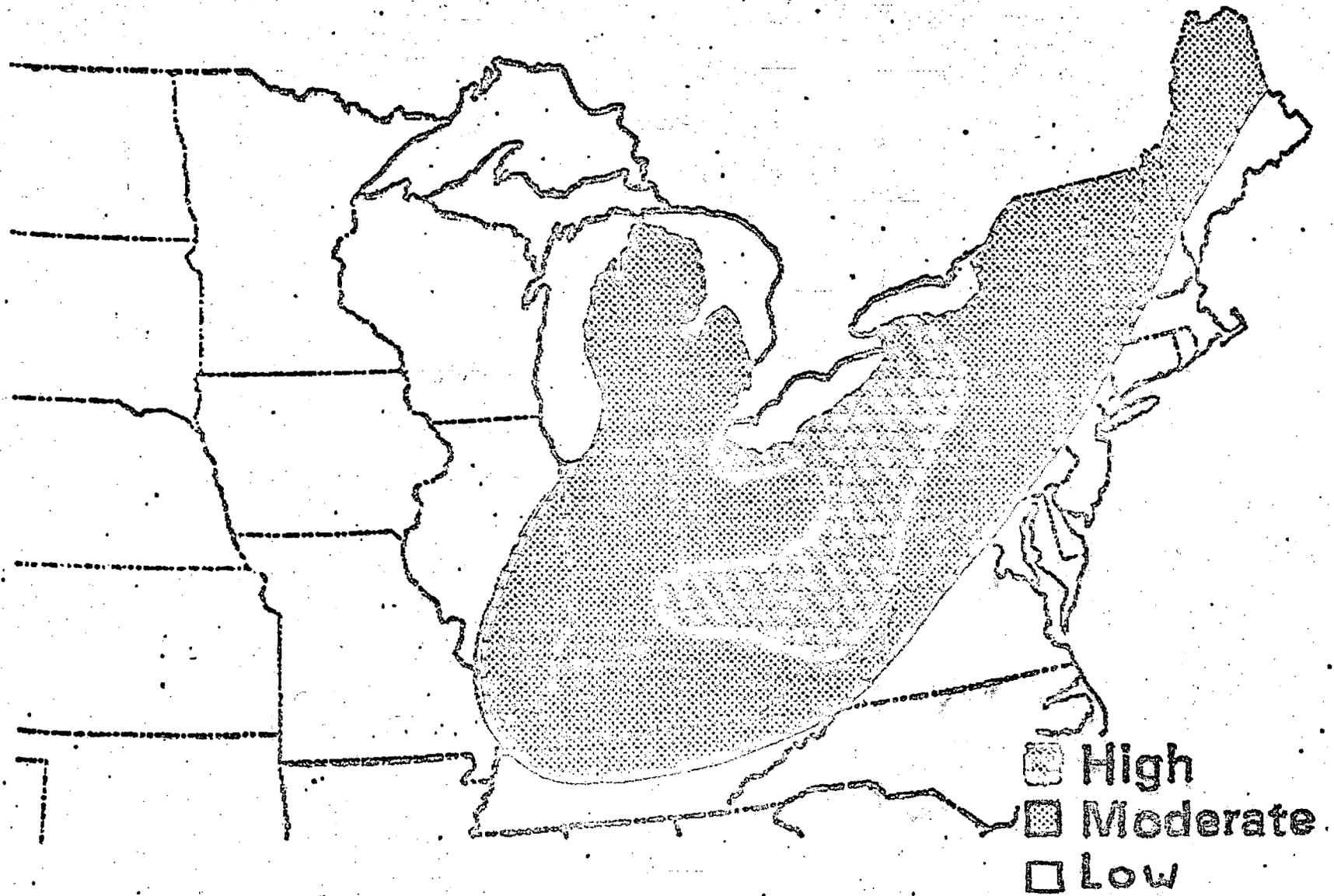
This circular requires no written reply; however, as needs dictate there may be further follow-up action by the NRC. This further action may take the form of site visits to certain facilities for firsthand observation of existing conditions. If such action is initiated individual licensees will be contacted in advance.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U.S.C. 3152 from the U. S. General Accounting Office. (GAO Approval B-180255 (R0072), expires 7/31/77).

Attachments:

Two Maps from the National  
Weather Service

# Flood Potential



# Principal Frozen Rivers

