

IE Circular No. 77-02  
February 15, 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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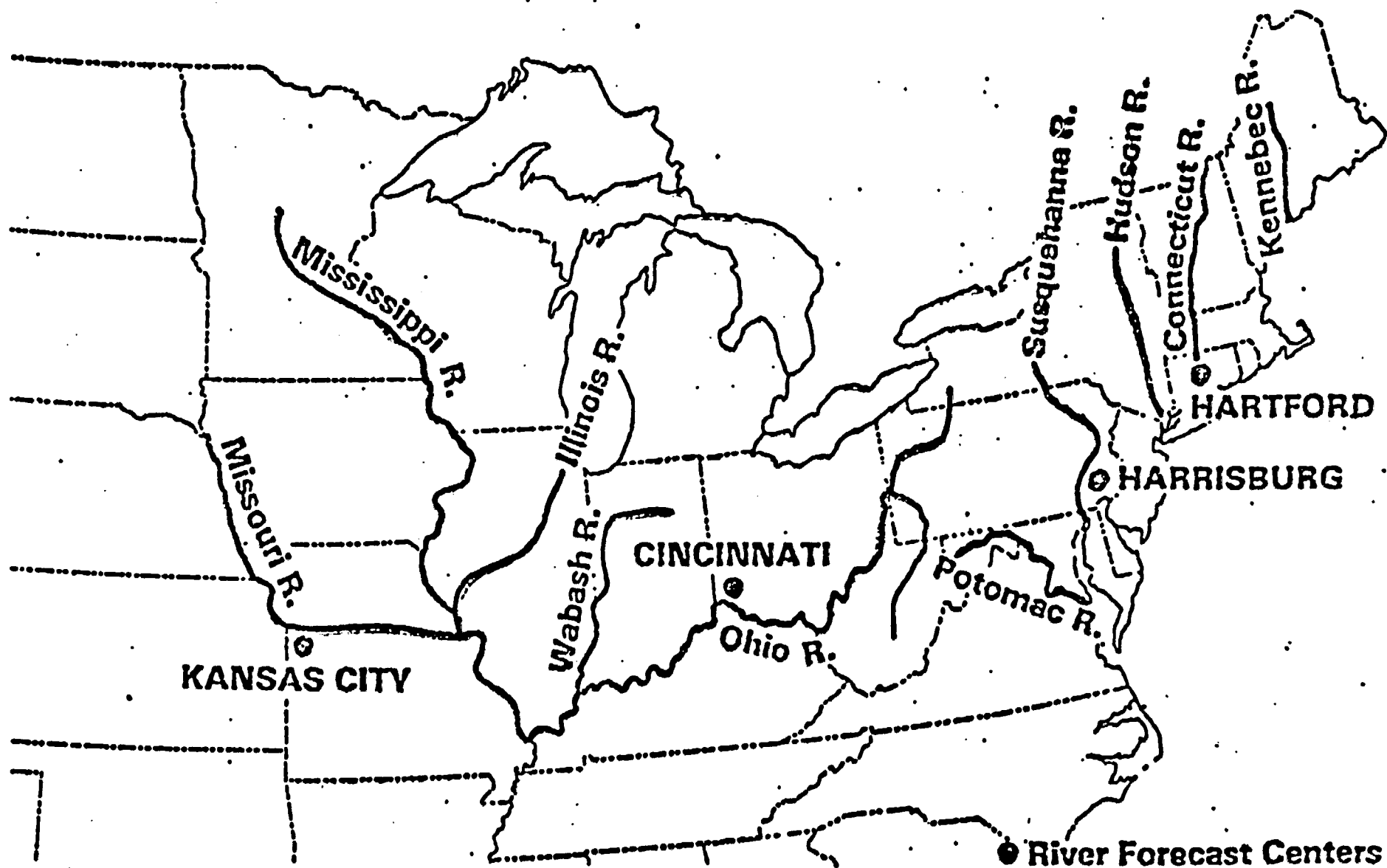
4. If any special barriers and/or procedures are needed to offset the conditions of 1, 2 or 3 above, these should be made ready for installation and/or implementation if the need arises. In addition, renewed attention should be given to established procedures or actions required to mitigate these conditions 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.

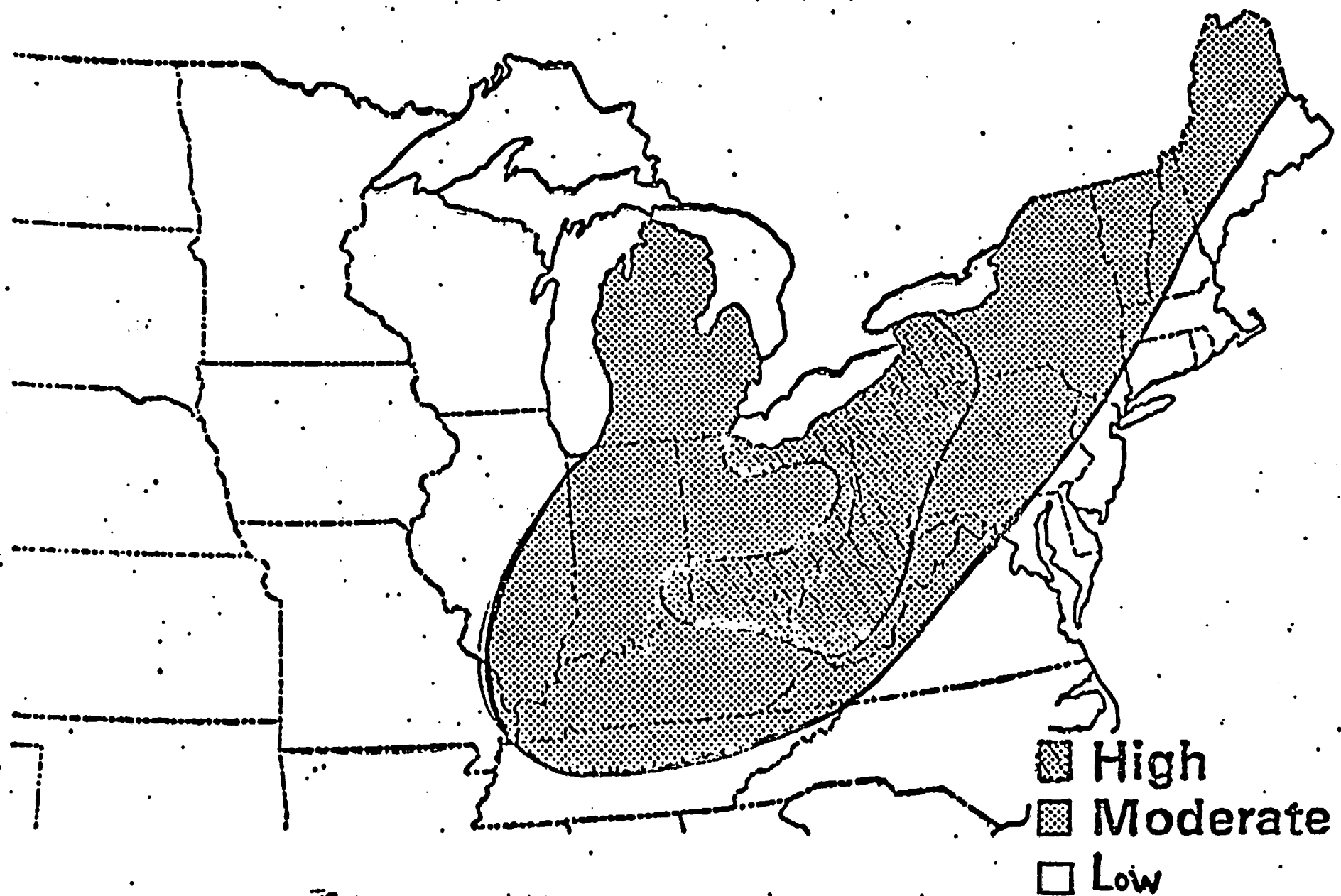
This circular requires no written reply; however, as needs dictate there may be further follow-up action by the NRC. This further action may take the form of site visits to certain facilities for firsthand observation of existing conditions. If such action is initiated individual licensees will be contacted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

# Principal Frozen Rivers



# Flood Potential



# LIST OF OPERATING LICENSE HOLDERS TO RECEIVE IE CIRCULAR 77-02

Region		
I	Babcock & Wilcox Fuels Division Apollo, PA Leechburg, PA	70-145 70-364
I	Baltimore Gas & Electric Company Calvert Cliffs, Units 1 & 2	50-317/318
I	Boston Edison Company Pilgrim 1	50-293
III	Commonwealth Edison Company Dresden, Units 1, 2, & 3 Quad Cities, Units 1 & 2 Zion, Units 1 & 2	50-10/237/249 50-254/265 50-295/304
I	Connecticut Yankee Atomic Haddam Neck (Conn Yankee)	50-213
I	Consolidated Edison Company of NY Indian Point 1, 2 & 3	50-3/247/286
III	Consumers Power Company Big Rock Pt Palisades	50-155 50-255
III	Dairyland Power Cooperative La Crosse	50-409
I	Duquesne Light Company Beaver Valley, Unit 1	50-334
III	Indiana & Michigan Electric Company D. C. Cook, Unit 1	50-315
III	Iowa Electric Light & Power Company Duane Arnold	50-331
I	Jersey Central Power & Light Oyster Creek, Unit 1	50-219
I	Maine Yankee Atomic Power Company Maine Yankee	50-309

I	Metropolitan Edison Company Three Mile Island, Unit I	50-289
IV	Nebraska Public Power District Cooper Station	50-298
I	Niagara Mohawk Power Corporation Nine Mile Pt., Unit 1	50-220
I	Northeast Nuclear Energy Company Millstone, Units 1 & 2	50-245/336
III	Northern States Power Company Monticello Prairie Island, Units 1 & 2	50-263 50-285/306
IV	Omaha Public Power District Ft. Calhoun, Unit 1	50-285
I	Philadelphia Electric Company Peach Bottom, Units 2 & 3	50-277/278
I	Power Authority of the State of NY Fitzpatrick	50-333
I	Public Service Electric & Gas Company Salem, Unit 1	50-272
I	Rochester Gas & Electric Corporation Ginna, Unit 1	50-244
III*	Toledo Edison Company Davis-Besse, Unit 1	50-346
I	Vermont Yankee Nuclear Power Corporation Vermont Yankee	50-271
II	Virginia Electric Power Company Surry, Unit 1 & 2	50-280/281
III	Wisconsin Electric Power Company Pt. Beach, Units 1 & 2	50-266/301

\* OL not issued as of this date; scheduled for fuel loading on 2/26/77.

III	Wisconsin Public Service Corporation Kewaunee	50-305
I	Yankee Atomic Electric Company Yankee-Rowe	50-29

Distribution

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NRC Central Files

IE Reading Files

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