JUN 25 1973

Docket No. 50-263

Northern States Power Company
ATTN: Mr. L. O. Mayer
Director of Nuclear
Support Services
414 Nicollet Mall
Minneapolis, Minnesota 55401

Gentlemen:

We have reviewed your letter dated September 28, 1972, responding to our August 3, 1972 inquiry regarding failure of engineered safety features due to flooding incidents such as the one that occurred at the Quad-Cities Unit 1 Nuclear Power Plant.

You reported that with respect to major Class II piping systems investigations were continuing to identify means of further reducing the potential for adverse interactions with essential equipment.

Please identify the results of this investigation and include your evaluation of the items listed in the enclosed "Guidelines for Protection from Flooding of Equipment Important to Safety" as they apply to the Monticello Nuclear Power Plant so that we may complete our review. The supplementary information should be submitted within 60 days. One signed original and thirty-nine additional copies of your submittals are required.

Sincerely,

Original signed by
Dennis L. Ziemann

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Directorate of Licensing

Enclosure:
Guidelines for Protection
from Flooding of Equipment
Important to Safety

cc: See next page

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cc w/enclosure:
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SURNAME ▶	X7403 JJShea:sjh	RMDiggs	DLZiemann			
DATE ▶	6/22/73	6/22/73	6/23/73			

GUIDELINES FOR PROTECTION FROM FLOODING OF EQUIPMENT IMPORTANT TO SAFETY

Investigate your facility to assure that equipment important to safety will not be damaged by flooding due to rupture of a non-Class I system component or pipe such that engineered safety features will not perform their design function. No single incident of a non-Class I system component or pipe failure shall prevent safe shutdown of the facility.

Your review should assure that the plants meet the following guidelines:

1. Separation for redundancy - single failures of non-Class I system components or pipes shall not result in loss of a system important to safety. Redundant safety equipment shall be separated and protected to assure operability in the event a non-Class I system or component fails.

2. Access doors and alarms - watertight barriers for protection from flooding of equipment important to safety shall have all access doors or hatches fitted with reliable switches and circuits that provide an alarm in the control room when the access is open.

3. Sealed water passages - passages or piping and other penetrations through walls of a room containing equipment important to safety shall be sealed against water leakage from any postulated failure of non-Class I water systems. The seals shall be designed for the SSE, including seismically induced wave action of water inside the affected compartment during the SSE.

4. Class I watertight structures - walls, doors, panels, or other compartment closures designed to protect equipment important to safety from damage due to flooding from a non-Class I system rupture shall be designed for the SSE, including seismically induced wave action of water inside the affected compartment during the SSE.

5. Water level alarms and trips - rooms containing non-Class I system components and pipes whose rupture could result in flood damage to equipment important to safety shall have level alarms and pump trips (where necessary) that alarm in the control room and limit flooding to within the design flood volume. Redundance of switches is required. Critical pump (i.e., high volume flow, such as condenser circulating water pumps) trip circuits should meet IEEE 279 criteria.

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6. Class I equipment should be located or protected such that rupture of a non-Class I system connected to a tower containing water or body of water (river, lake, etc.) will not result in failure of the equipment from flooding.

7. The safety analysis shall consider simultaneous loss of offsite power with the rupture of a non-Class I system component or pipe.

Your responses should include a listing of the non-Class I systems considered in your analysis. These should include at least the following systems:

Firewater	Demineralized Water
Service water	Drains
Condensate	Heating boiler condensate
Feedwater	Condenser circulating water
Reactor Building Cooling Water	Makeup
Turbine Building Cooling Water	Potable water

If your analysis identifies deficiencies, describe interim and final corrective action to be taken and provide a schedule for completion of any required modifications. All corrective action should be completed as expeditiously as is practicable.