



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

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JUL 24 1980

Docket No. 50-282

Docket No. 50-306

Northern States Power Company  
ATTN: Mr. Dennis E. Gilberts  
Vice President  
Power Production and  
System Operation  
414 Nicollet Mall  
Minneapolis, MN 55401

Gentlemen:

The enclosed IE Bulletin No. 80-18 is forwarded for action. A written response is required.

In order to assist the NRC in evaluating the value/impact of each bulletin on licensees, it would be helpful if you would provide an estimate of the manpower expended in conduct of the review and preparation of the reports required by the bulletin. Please estimate separately the manpower associated with corrective actions necessary following identification of problems through the bulletin.

If you desire additional information regarding this matter, please contact this office.

Sincerely,

*J. G. Keppler*  
James G. Keppler  
Director

Enclosure: IE Bulletin  
No. 80-18

cc w/encl:  
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

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July 24, 1980

IE Bulletin No. 80-18

MAINTENANCE OF ADEQUATE MINIMUM FLOW THRU CENTRIFUGAL CHARGING PUMPS  
FOLLOWING SECONDARY SIDE HIGH ENERGY LINE RUPTURE

Description of Circumstances:

Letters similar to the May 8, 1980 notification made pursuant to Title 10 CFR Part 21 (enclosure) were sent from Westinghouse to a number of operating plants and plants under construction (list, within enclosure) in early May, 1980.

The letters and the enclosed "Part 21" letter contain a complete description of the potential problem summarized below. The letters indicated that under certain conditions the centrifugal charging pumps (CCPs) could be damaged due to lack of minimum flow before presently applicable safety injection (SI) termination criteria are met. The particular circumstances that could result in damage vary somewhat from plant to plant, but involve unavailability of the pressurizer power operated relief valves (PORVs), with operation of one or more CCPs repressurizing the reactor during SI following a secondary system high energy line break. Since the SI signal automatically isolates the CCP mini-flow return line, the flow through the CCPs is determined by the individual pump characteristic head vs. flow curve, the pressurizer safety valve setpoint, and the flow resistances and pressure losses in the piping and in the reactor core. That minimum flow may not be adequate to insure pump cooling, and resulting pump damage could violate design criteria before current SI termination criteria are met.

Westinghouse recommends that plant specific calculations outlined in the letter (enclosure) be performed to determine if adequate minimum flow is assured under all conditions. If adequate minimum flow is not assured, Westinghouse recommends specific equipment and procedure modifications which will result in adequate minimum flow. The recommended modifications assure availability of the necessary minimum flow by assuring that the mini-flow bypass line will be open when needed, but will be closed at lower pressures when the extra flow resulting from bypass line closure might be necessary for core cooling.

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