



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

JUL 24 1980

In Reply Refer To:

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50-405

Virginia Electric and Power Company  
ATTN: J. H. Ferguson  
Executive Vice President-Power  
P. O. Box 26666  
Richmond, VA 23261

Gentlemen:

The enclosed IE Bulletin No. 80-18, is forwarded for your information. Although no written response is required at this time, these concerns will be addressed as part of the licensing process for your plant. If you desire additional information regarding this matter, please contact this office.

Sincerely,

James P. O'Reilly  
Director

Enclosures:

1. IE Bulletin No. 80-18 w/encls
2. List of Bulletins Recently Issued

cc w/encl:

W. R. Cartwright, Station Manager  
P. G. Perry, Senior Resident Engineer

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF INSPECTION AND ENFORCEMENT  
WASHINGTON, D.C. 20555

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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