



**Commonwealth Edison**  
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May 9, 1977



Mr. Donald K. Davis, Acting Chief  
Operating Reactors - Branch 2  
Division of Operating Reactors  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

**REGULATORY DOCKET FILE COPY**

Subject: Dresden Station Unit 2  
Recirculation Pump Overspeed Protection  
NRC Docket No. 50-237

References (a): Dresden Nuclear Power Station Unit 2  
Application for Conversation from  
Provisional to Full-Term Operating License  
(FTOL), Section 5.2.9

(b): E. A. Hughes (GE) letter report to R. C. DeYoung  
(NRC) dated January 18, 1977.

Dear Mr. Davis:

A commitment was made in Reference (a) to review with NRC the protective devices to preclude problems attendant to overspeed of the recirculation pumps and motors following a recirculation line break. These potential problems were first addressed by General Electric in Topical Report NEDO-10189, "An Analysis of Recirculation Pump Overspeed in a Typical General Electric Boiling Water Reactor," dated October, 1972.

Further analysis has been performed by General Electric that demonstrates a decoupler is not needed to protect the recirculation pump from destructive overspeed conditions. This analysis was transmitted by General Electric to NRC by Reference (b).

The results of the most recent General Electric analysis demonstrates that for the complete spectrum of breaks in piping on the discharge side of the recirculation pump, no overspeed conditions will exist. The study indicates by conservative analysis that in the unlikely event of a completely offset guillotine suction break, potential overspeed may be calculated. However, further consideration supports the conclusion that this calculated overspeed condition would not realistically create an unsafe condition. Therefore, there is no need for protective equipment on Commonwealth Edison operating boiling water reactor recirculation pumps.

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The analysis for this report involves a limiting speed calculation that assumes full reactor pressure and two phase flow long enough to accelerate the pump and motor to full windmilling speed. This is conservative because large line breaks cause rapid vessel depressurization so that the time dependent windmilling speed will not be achieved.

It is believed this transmittal satisfies the Dresden Station Unit 2 FTOL commitment to review the recirculation pump overspeed condition.

If you have any questions concerning this matter please contact this office.

One (1) signed original and 39 copies of this letter are provided for your use.

Very truly yours,



M. S. Turbak  
Nuclear Licensing Administrator  
Boiling Water Reactors

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