

October 5, 1977

LOWELL E. ROE
Vice President
Facilities Development
(419) 259-5242

Serial No. 389

Docket No. 50-346

Mr. James G. Keppler
Regional Director, Region III
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

POOR ORIGINAL

Dear Mr. Keppler:

In accordance with 10 CFR Part 21.21(b), this is a report of a defect in a component installed in the Davis-Besse Nuclear Power Station, Unit No. 1. The component involved is the governor on the auxiliary feed pumps.

The auxiliary feed pumps were supplied by Byron Jackson Pump Division. The steam driven pump turbine was supplied by Terry Corporation to Byron Jackson. In turn, the turbine governor was supplied to Terry Corporation by Woodward Governor Company. The turbine governor is identified as a type PG-PL, which has a servomotor control employing a Bodine Electric Company motor.

The defect involves a potential for the governor to bind under certain conditions and preventing the turbine from coming up to design speed. The operating procedures for this equipment called for the governor to be placed in the high speed stop position prior to shutting down the turbine. Investigation has shown that with the Bodine servomotor driving against the high speed stop, a misalignment force is applied to the T-bar of the governor linkage. This misalignment force creates a potential for the governor to bind at a speed position less than design speed upon a turbine startup. This misalignment force does not always cause the governor to bind and this misalignment force can be removed by driving the Bodine servomotor away from the high speed stop.

The safety hazard which could be created is the potential for both auxiliary feed pumps to fail to come up to design speed upon startup. This could result in a substantial loss of auxiliary feedwater flow to the steam generators when such flow was required. This in turn could cause significant reactor coolant system pressure/temperature transients, and significant boiling in the reactor coolant system if substantial decay heat were present in the reactor core.

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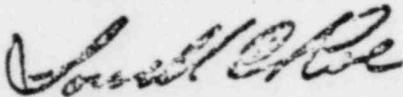
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The evaluation and identification of this defect was provided to me on September 30, 1977, and was discussed with Mr. T. Harpster of your office on September 30, 1977.

There are two identical auxiliary feed pumps with the turbine governors, described above, installed in the Davis-Besse Nuclear Power Station, Unit No. 1.

The corrective action being taken is a procedure modification to require that the turbine be shut down with the governor servomotor in the low speed stop position (instead of the previously used procedure of shutting down the governor at the high speed stop position). This will eliminate the possibility of any misalignment forces being applied to the governor T-bar and, as a result, eliminate any potential for the governor to bind. Confirmatory testing of the governors has shown that the turbines will come up to design speed prior to the time required for the Bodine servomotor to drive from the low speed stop to the high speed stop position. In addition to the procedure modification, alarms are being provided in the control room to show the operators that the governor is at other than low speed stop position when the turbine is shut down. We expect to complete the above changes prior to going to Mode 2 during the next unit startup.

Yours very truly,



Lowell E. Roe
Vice President
Facilities Development

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