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Grand Gulf Nuclear Station

U.S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, D.C. 20555

Attention: Document Control Desk

Subject: Grand Gulf Nuclear Station
Docket No. 50-416
License No. NPF-29
Valid Failure of Emergency Diesel Generator 12 Due to a Failed Shuttle Valve (Special Report 96/001)

GNRO-96/00032

Gentlemen:

On February 29, 1996, Emergency Diesel Generator (EDG) 12 tripped following a start for a monthly surveillance run. The start for the monthly surveillance run followed an EDG maintenance outage in which the pneumatic control board was taken out of service for maintenance. During this maintenance, air is removed from the control board.

In accordance with GGNS procedure, a simulated run is conducted before declaring the EDG operable following removal of air from the control board. During the simulated run, certain trips are verified and the control board is checked for air leaks prior to restoring the EDG to operable status. After initial difficulty, the simulated run was completed. The EDG was returned to operable status and prepared for a start.

With all engine starts, a 60 second timer is initiated. This timer allows the engine time to build adequate oil pressure. If after 60 seconds adequate oil pressure is present, the engine continues to run and control board shuttle valves shift position. Failure of the shuttle valves to properly reposition, vents air from portions of the pneumatic control board, causing the engine to trip. During the February 29 event, performance of the simulated run failed to detect the sticking shuttle valve. This valve vented air from the pneumatic control board, causing EDG 12 to trip.

The shuttle valve was replaced, the EDG was restarted, and the surveillance run successfully completed. The simulated run procedure (07-S-23-P75-3) will be reviewed by System Engineering to determine if additional measures can be implemented during the simulated run that would indicate a sticking shuttle valve failure. Also, shuttle valve performance will be discussed with the other owners of TDI EDGs in nuclear service to determine whether suitable hardware exist to enhance shuttle valve performance.

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