

A Centerior Energy Company

DONALD C. SHELTON

Docket Number 50-346

License Number NPF-3

Serial Number 1644

April 24, 1989

United States Nuclear Regulatory Commission Document Control Desk Washington, D. C. 20555

Subject: Steam and Feedwater Rupture Control System Modifications

Gentlemen:

Toledo Edison's Course of Action (COA), Appendix IV.C.2.2, dated September 5, 1985, (Serial Number 1182) detailed actions related to the Steam and Feedwater Rupture Control System (SFRCS). Those actions resulted from the Decay Heat Removal Task Force review to improve the overall system reliability. One of the recommended actions was to delete the pneumatic relays in the control circuit of the Main Steam Isolation Valves (MSIV).

Toledo Edison's letter dated June 9, 1988 (Serial Number 1468) provided additional information concerning this action and committed to completing evaluations to determine the necessary actions and advise you of our plan and schedule.

Toledo Edison's review of this concern has concluded the following:

The root cause of the June 9, 1985 SFRCS actuation was determined to be Steam Generator (SG) level oscillations caused by Turbine Stop Valve closure. This problem has been corrected by damping all eight SG level transmitter outputs. Additionally, in the new SFRCS system (modified during the fifth refueling outage) the inputs to the SFRCS logic from the SFRCS bistables are paired such that both trip inputs from the same parameter must be present to actuate a logic channel. Both logic channel trips in a single actuation channel must now be present for an SFRCS actuation. This pairing of inputs ensures that spurious trips from different inputs will not cause an actuation of the SFRCS.

The above described SFRCS design modification ensures that spurious closure of the MSIVs will not occur following momentary, short-lived SFRCS actuation signals similar to the one experienced during the June 9, 1985 event at Davis-Besse.

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Since the SFRCS is an automatic reset system, seal-in features are provided for SFRCS actuated equipment to ensure full actuation and to satisfy IEEE-279. Additionally, after the SFRCS trip input signal is received, there is a two second seal-in in the logic to ensure the SFRCS actuated equipment seal-in features discussed above are satisfied.

Furthermore, a review of previous operating history, conducted during the System Review and Test Program (SRTP), indicated that pneumatic relay failures have not caused spurious MSIV closures. Additionally, a single failure of one of the pneumatic relays by itself will neither result in a spurious closure of the MSIV nor culminate in a failure of the MSIV to close in response to an SFRCS signal. This is due to component redundancy in the valve control circuitry. These relays are currently actuated during SFRCS testing on a 30 day frequency and actuation verified on an eighteen month frequency during SFRCS initiated MSIV testing.

Based on the above considerations, the current SFRCS design has been significantly enhanced as compared to the system design present on June 9, 1985. Therefore, Toledo Edison believes the original intent of COA Appendix IV.C.2.2, to improve the adequacy of the design and operation of the SFRCS is complete and no further modifications are considered necessary.

If you have any questions concerning this matter, please contact Mr. R. W. Schrauder, Nuclear Licensing Manager, at (419) 249-2366.

Very truly yours,

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JCS/dlm

- cc: P. M. Byron, DB-1 NRC Resident Inspector A. B. Davis, Regional Administrator, NRC Region III
 - T. V. Wambach, DB-1 NRC Senior Project Manager