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Docket Number 50-346

License Number NPF-3

Serial Number 1-1014

June 15, 1993

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

Subject: Response to NRC Inspection Report Number 50-346/93009

Gentlemen:

Toledo Edison (TE) received NRC Inspection Report 50-346/93009 (Log Number 1-2851) on May 24, 1993. During this inspection, an unresolved item was identified by the inspectors regarding surveillance test acceptance criteria for the Auxiliary Feedwater (AFW) pumps (Unresolved Item 93009-03). The NRC requested that TE provide a response to the identified concern addressing corrective measures taken by TE to resolve this issue and the impact of the identified concern on previous AFW pump surveillance tests. This letter provides the requested response.

Each AFW pump at the Davis-Besse Nuclear Power Station (DBNPS) is presently required to deliver a minimum of 600 gallons per minute (gpm) of water to a Once Through Steam Generator (OSTG) at a pressure of 1050 psig. Accounting for the effects of system flow resistances, elevation differences and recirculation flow, the minimum pump performance criteria for AFW Pump 1-1 are 600 gpm flow at 1236 psig pump discharge pressure. The minimum performance requirements for AFW Pump 1-2 are 600 gpm flow at 1227 psig pump discharge pressure.

Performance of the current quarterly surveillance tests for the AFW pumps (DB-SP-03151 and DB-SP-03160) involve measuring the flow rate, the pump suction pressure, the pump discharge pressure, and the pump speed for each pump. This data is then "normalized" to a reference

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pump speed (nominally 3600 rpm) using pump affinity laws and compared to the acceptance criteria. This practice also facilitates comparison between pump tests for detection of pump degradation.

During the recent NRC inspection of the DBNPS Inservice Testing Program it was noted by the inspectors that the pump performance parameters for AFW Pump 1-1 were approaching the minimum criteria mentioned above. The inspectors contended that if instrument uncertainties were applied to the data measured during recent surveillance tests, the minimum flow and discharge pressure requirements may not have been met.

Instrument uncertainties were not considered in the determination of the pump performance criteria mentioned above, nor are they typically considered in establishing performance criteria for other pumps in the DBNPS Inservice Testing Program. Reasons for not considering instrument uncertainties are 1) the pumps typically operate well within the established design limits and the relatively minor variations introduced by instrument uncertainty are considered insignificant; 2) the analyses of design basis events use conservative inputs and, as such, are insensitive to minor variations caused by instrument uncertainty; and 3) there is no specific industry or regulatory guidance regarding application of instrument uncertainty to process measurement devices. Existing industry guidance (i.e., Regulatory Guide 1.105 and Instrument Society of America (ISA) Standard S67.04) for setpoint determination apply to instruments that provide automatic protective functions and not to process measuring equipment. With respect to ISA S67.04, a setpoint is defined as "a predetermined level at which a bistable device changes state to indicate that the quantity under surveillance has reached the selected value."

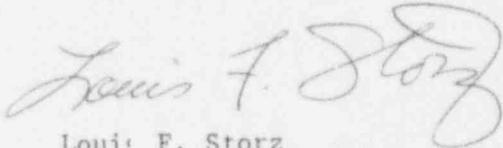
In response to the inspectors' concerns, TE reviewed the results of the last 12 quarterly surveillance tests for both AFW pumps. This review took into account calculated and/or actual measured instrument uncertainties of the test instruments. In each case, the pump performance criteria were above the established minimum values and the pump was considered operable.

It is TE's intent to increase the operating speed of AFW Pump 1-1. This will raise the pump operating parameters to a point well above the minimum values such that instrument uncertainties are not significant. Until the pump speed can be increased, TE will revise procedures DB-SP-03151 and DB-SP-03160 to change the acceptance criteria for AFW pump testing to allow for instrument uncertainties and to specify that measured pump flow and discharge pressure will be used to demonstrate pump operability. The procedure changes will be made prior to the performance of the next quarterly surveillance tests.

Docket Number 50-346
License Number NPF-3
Serial Number 1-1014
Page 3

Should you have any questions or require additional information, please contact Mr. Robert W. Schrauder, Manager - Nuclear Licensing, at (419) 249-2366.

Very truly yours,



Louis F. Storz
Vice President - Nuclear

NKP/dlc

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