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Docket Number 50-346

License Number NPF-3

Serial Number 2224

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United States Nuclear Regulatory Commission
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Washington, D. C. 20555

Subject: NUREG-0737, Item II.F.2: Instrumentation for Detection of
Inadequate Core Cooling - Reactor Coolant Pump Void Fraction
Monitoring

Gentlemen:

The purpose of this letter is to provide additional information relative to the installed Reactor Coolant Pump (RCP) void fraction monitoring plant computer program for detecting Reactor Coolant System (RCS) voids at Toledo Edison's (TE) Davis-Besse Nuclear Power Station (DBNPS). This letter supersedes TE's letter of November 22, 1993 (Serial Number 2192) to the NRC and addresses the recommendation contained in the NRC's Safety Evaluation Report for NUREG-0737, Item II.F.2 (TE Log Number 3169, dated February 14, 1990) to monitor RCS voids during reactor operation.

The DBNPS void fraction monitoring plant computer program utilizes RCS hot leg pressure, cold leg wide range temperature, and RCP motor power as input parameters. This program calculates the RCS void fraction that each RCP experiences by correlating the RCP motor power with the RCP and motor combined efficiency. The RCP performance under a two-phase flow condition is detected by a decrease in RCP motor power which is correlated directly with the density decrease of the fluid in the RCP. The decrease in density of the fluid in the RCP is then translated to RCS void fraction by the computer program.

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Operating Companies:
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The DBNPS void fraction monitoring plant computer program was initially programmed to commence calculating voids in the RCS when the RCPs were running and the reactor tripped. The program did not calculate a void fraction during reactor operation or when the RCPs were off.

In order to resolve the NRC's recommendation to also calculate voids during reactor operation, TE has revised its void fraction calculation plant computer program. The void fraction is now calculated and printed on the computer-generated Daily Log when the RCPs are running and the reactor is either operating or tripped. As a result, TE believes this resolves the NRC's recommendation contained in its Safety Evaluation Report for Item II.F.2.

Should you have any further questions, please contact Mr. William T. O'Connor, Manager - Regulatory Affairs, at (419) 249-2366.

Very truly yours,

D.C. Shelton
Pl. G. T. O'Connor
for

DRW/laj

cc: J. B. Martin, Regional Administrator, NRC Region III
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