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Detroit Edison



A DTE Energy Company

June 21, 2000
NRC-00-0045

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington D C 20555-0001

- References:
- 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43
 - 2) NRC Generic Letter 96-05,
"Periodic Verification Of Design-Basis Capability
Of Safety-Related Motor-Operated Valves,"
dated September 18, 1996
 - 3) Detroit Edison letter to NRC, "Detroit Edison
180-Day Response to NRC Generic Letter (GL) 96-05,"
NRC-97-0020, dated March 18, 1997
 - 4) NRC letter to Detroit Edison, "Request for
Additional Information Related to the Fermi-2
Response to Generic Letter 96-05, "Periodic
Verification of Design-Basis Capability of Safety-Related
Motor-Operated Valves," dated February 22, 1999
 - 5) Detroit Edison letter to NRC, "Response to NRC
Generic Letter (GL) 96-05 Request for Additional
Information," dated April 23, 1999
 - 6) Detroit Edison letter to NRC, "Clarifications to Detroit
Edison's Response to Generic Letter (GL) 96-05 Regarding
the Fermi 2 MOV Periodic Verification Program,"
dated December 22, 1999

A073

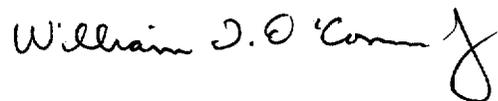
Subject: Additional Information Regarding MOV Testing at Fermi 2
in Response to Generic Letter 96-05 (TAC No. M97047)

Reference 3 described Detroit Edison's Motor-Operated Valve (MOV) Periodic Verification Program (PVP) for Fermi 2 in response to Generic Letter 96-05 (Reference 2). In Reference 5 Detroit Edison provided a response to additional information requested by the NRC in Reference 4. Reference 6 provided clarifications to Detroit Edison's earlier responses regarding the extent of compliance of the MOV PVP program at Fermi 2 with the Joint Owners Group (JOG) program.

In a May 24, 2000 conference call between the NRC staff and Detroit Edison personnel, the NRC requested additional written information regarding the use and application of Motor Power Monitor (MPM) technology for MOV testing from the Motor Control Center (MCC) at Fermi 2. The enclosure to this letter contains the requested information.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,



Enclosure

cc: A. J. Kugler
M. A. Ring
NRC Resident Office
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

**ADDITIONAL INFORMATION REGARDING MCC-BASED
DIAGNOSTIC MOV TESTING AT FERMI 2**

The Motor Power Monitor (MPM) system used at Fermi 2 records several electrical parameters as listed below. The information recorded is analyzed for condition monitoring and trending of Motor Operated Valve (MOV) performance. When used with the equivalent (EQ) thrust algorithm, the MPM system will determine the MOV thrust at Torque Switch trip. The 1997 vendor accuracy validation was carefully reviewed prior to integration into the Fermi 2 MOV testing program. Some of the main MPM testing parameters evaluated are:

- The average running and the peak seating current and power
- The power at Torque Switch trip
- Valve Condition Load (VCL) or parasitic load power ratio (in relation to the peak seating power)
- Actuator no-load power level
- The total wedging time
- The contact operation time, and
- The equivalent thrust

MPM EQ thrust testing is used as an alternative to typical at-valve diagnostic testing on any AC MOV with greater than 25 percent thrust margin. At the present time, 80 out of 129 (62 percent) non quarter-turn Generic Letter (GL) 96-05 MOVs at Fermi 2 meet this criterion. The majority of these MOVs have thrust margins in excess of 50 percent. In addition to thrust, Fermi 2 uses a specially-developed and validated software (KCI-MT) to derive motor torque values on most AC MOVs from the motor power data acquired with the MPM system. This provides a secondary method of determining actuator output torque without using the MOV Stem Factor.

At-valve VOTES diagnostic testing is accompanied by concurrent MPM testing. This is done to allow for using the MPM test data for more accurate condition monitoring as well as to provide a comparison between VOTES results and MPM EQ thrust results for plant specific validation purposes. A formal plant specific validation of the MPM EQ thrust methodology was completed in June 1999. The evaluation utilized concurrent VOTES and MPM test information on 16 MOVs. The comparison resulted in a +/- 12.3 percent accuracy within two standard deviations. This is well within the vendor-stated accuracy of +/- 15.0 percent. As additional concurrent tests are obtained, Detroit Edison will evaluate updating the formal validation data file to include the new test information. MPM condition monitoring tests are presently performed on GL 96-05 MOVs every 18-24 months in addition to the required periodic verification testing per the Inservice Testing (IST) program. This allows for a much more frequent data acquisition for trending and condition monitoring.