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DTE Energy



10 CFR 50.54(f)

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NRC-07-0003

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 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power, dated February 1, 2006
 - 3) NRC-06-0013, Detroit Edison's 60-Day Response to Generic Letter 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power, dated April 3, 2006
 - 4) Request for Additional Information Regarding Resolution of Generic Letter 2006-02, Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power (TAC Nos. MD0947 through MD1050), dated December 5, 2006

Subject: Detroit Edison's Response to Request for Additional Information Regarding Resolution of Generic Letter 2006-02 (TAC Nos. MD0947 through MD1050), dated December 5, 2006

The purpose of this letter is to provide the additional information requested in Reference 4. The information requested was contained in Enclosure 2 with plant / question applicability provided in Enclosure 3 of Reference 4. Specifically, Fermi 2 was requested to respond to questions 3 and 5 of Enclosure 2 of Reference 4.

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Some of the questions in this Request for Additional Information (RAI) seek information about analyses, procedures, and activities concerning grid reliability of which Fermi 2 does not have first hand knowledge and which are beyond the control of Fermi 2. In providing information in response to such questions, Fermi 2 makes no representation as to the information's accuracy or completeness.

The Fermi 2 response is as follows:

REQUESTED INFORMATION

3. Verification of Real Time Contingency Analysis (RTCA) Predicted Post-Trip Voltage

Your response to question 2(g) indicates that you have not verified by procedure the voltages predicted by the online grid analysis tool (software program) with actual real plant trip voltage values. It is important that the programs used for predicting post-trip voltage be verified to be reasonably accurate and conservative.

3a) What is the range of accuracy for your grid operator's (GO's) contingency analysis program?

Response: The transmission system operator (TSO) and reliability coordinator / reliability authority (RC/RA) contingency analysis programs are commercial grade programs utilizing industry typical equipment (sensors, relays, etc.).

There are no North American Electric Reliability Council (NERC) accuracy requirements associated with contingency analysis programs and consequently the Fermi 2 (EF2) nuclear power plant (NPP) TSO and RC/RA have not kept accuracy records specific to Fermi scenarios. Should conditions arise that call the accuracy of the models into question, they would be investigated and corrected by the TSO and RC/RA as both Emergency Management System (EMS) systems contain provisions for State Estimation "tuning."

3b) Why are you confident that the post-trip voltages calculated by the GO's contingency analysis program (that you are using to determine operability of the offsite power system) are reasonably accurate and conservative?

Response: Degraded voltage following a plant trip has not been predicted by the annual grid reliability studies conducted by the TSO in accordance with UFSAR 8.2.2.5. These studies support the Fermi 2 Licensing basis for degraded voltage as discussed in the UFSAR.

Based upon conservatisms in the Fermi Electrical Transient Analysis Program (ETAP) model and in post accident loads provided to the TSO, post-trip voltages at Fermi busses predicted by the TSO and RC/RA's RTCA would be expected to be conservative.

Degraded voltage has not been a problem following any plant centered EF2 NPP trip with the International Transmission Company (ITC) as the TSO. Had problems been evident, ITC could have compared historical data from PI Historian data before and after the Fermi 2 trip against what contingency analysis would have predicted for the loss of the EF2 NPP and initiated corrective action.

Because many of the Midwest Independent Transmission System Operator, Inc. (Midwest ISO) transmission owning member companies have similar RTCA programs, there are many opportunities to compare the results. This results in a high confidence that the RTCA results are accurate. However, if the post-trip resultant voltages are outside of the criteria (RTCA Alarm Setpoint), when they are predicted to be within, Midwest ISO would be initiating an investigation and corrective action.

Both the TSO and RC/RA have confidence in their EMS equipment and its State Estimation and RTCA, so EF2 NPP personnel can be confident in using their output as another tool to initiate evaluations that could lead to declaring offsite power circuits inoperable. The TSO and RC/RA confidence is based on getting reasonable values from the program as they maintain the whole grid system (not just the EF2 NPP interconnections).

3c) What is your standard of acceptance?

Response: Acceptance of the TSO's and RC/RA's confidence, use, and adequacy of their RTCA programs is expected to be qualitative only. If too many RTCA false initiation alerts or any RTCA degraded voltage situations are missed, EF2 NPP personnel could request that the affected contingency analysis programs be "tuned."

EF2 NPP personnel believe that the TSO's and RC/RA's contingency analysis programs are likely to remain the best available tool for initiating evaluations that could lead to declaring off-site power circuits inoperable.

Both the TSO and RC/RA have indicated a willingness to provide the Fermi 2 Nuclear Power Plant performance analysis of post-contingent Bus 301, 302, 101 and 102 voltage telemetry values against their predicted pre-contingent RTCA voltages following an unscheduled trip of the Fermi 2 Nuclear Power Plant while synchronized. However, both the TSO and RC/RA have indicated

that EMS system software modifications would be required to at all times capture the predicted pre-contingent RTCA voltage values. At the current time, both EMS system designs only capture pre-contingent RTCA voltage values in history files if voltage alarm criteria are violated. If software can be revised to capture predictive data after each plant trip, both the TSO and RC/RA have indicated a willingness to promptly report to EF2 NPP any discrepancies and to enter them into their corrective action programs as appropriate. Negotiations are in progress to formalize these understandings in the next revision of the Nuclear Power Plant Operating Agreement between Midwest ISO, ITC and Fermi 2. Fermi 2 is considering coordination of these analyses as part of a Fermi 2 procedure.

5. Seasonal Variation in Grid Stress (Reliability and Loss-of-Offsite Power (LOOP) Probability)

Certain regions during certain times of the year (seasonal variations) experience higher grid stress as is indicated in Electric Power Research Institute (EPRI) Report 1011759, Table 4-7, Grid LOOP Adjustment Factor, and NRC NUREG/CR-6890.

5a) Do you adjust the base LOOP frequency in your probabilistic risk assessment (PRA) and Maintenance Rule (MR) evaluations for various seasons?

Response: The base LOOP frequency is not explicitly adjusted in the PRA and MR evaluations for seasonal variations.

5b) If you do not consider seasonal variations in base LOOP frequency in your PRA and Maintenance Rule evaluations, explain why it is acceptable not to do so?

Response: When conditions exist that can potentially impact LOOP frequency (high grid loading, grid stress, or severe/extreme weather) plant procedures dictate that the LOOP frequencies be increased when performing risk assessments for scheduled and emergent maintenance activities. Specifically, procedure MMR Appendix H Revision 2, "On-Line Risk Matrix," Section C, "Initiating Event Increase for EOOS," states that the LOOP frequency should be elevated for the following conditions:

1. Critical Load Day (high load demand on the surrounding grid)
2. Notification from SOC/ITC that minimum required voltage cannot be assured or maintained in the event that Fermi or another large load is lost
3. Tornado Watch/Warning
4. Severe Thunderstorm Watch/Warning

5. High Winds
6. Ice Storm with ice accumulation
7. Increased Geomagnetic Activity

In addition to these conditions, the LOOP frequency is also increased when maintenance activities take place on either of the two offsite power supply switchyards. The implementation of this procedure results in a higher average LOOP frequency during the summer months. Since tracking began in the summer of 2006, the LOOP initiating event frequency was elevated approximately one third of the time during the summer months due to conditions described in procedure MMR Appendix H Revision 2. The advantage to this methodology versus creating a seasonal weighting factor is that actual conditions are explicitly addressed in the risk assessments (allowing for a more accurate calculation of plant risk than by employing a seasonal weighting factor that may not accurately portray environmental or grid conditions for a particular circumstance).

No commitments are being made as a result of this letter.

Should you have any questions or require additional information, please contact Mr. Ronald W. Gaston of my staff at (734) 586-5197.

Sincerely,



Enclosures

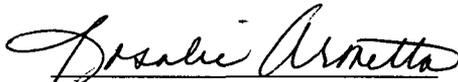
cc: NRC Project Manager
NRC Resident Office
Reactor Projects Chief, Branch 4, Region III
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

I, DONALD K. COBB, do hereby affirm that the foregoing statements are based on facts and circumstances which are true and accurate to the best of my knowledge and belief.



DONALD K. COBB
Assistant Vice President, Nuclear Generation

On this 26th day of January, 2007 before me personally appeared Donald K. Cobb, being first duly sworn and says that he executed the foregoing as his free act and deed.



Notary Public

ROSALIE ARMETTA
NOTARY PUBLIC MONROE CO., MI
MY COMMISSION EXPIRES Oct 11, 2007