

Douglas R. Gipson  
Senior Vice President  
Nuclear Generation

Fermi 2  
6400 North Dixie Highway  
Newport, Michigan 48167  
(313) 586-5249

Detroit  
Edison

May 24, 1996  
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U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington D. C. 20555

Reference: Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43

Subject: Special Report of Inoperable Seismic Monitoring Instruments

In accordance with Technical Specification 3.3.7.2.a and 6.9.2, this special report is being submitted to document inoperability of seismic monitoring instrumentation exceeding 30 days. This resulted from inadequate surveillance testing of the active triaxial accelerometers and seismic trigger.

Seismic monitoring instrumentation is described in Updated Final Safety Analysis Report (UFSAR) Section 3.7.4. The active system includes a seismic trigger (Omnitrigger) and two triaxial accelerometers. The Omnitrigger activates the seismic monitoring system data recorder. It also activates a control room annunciator to alert personnel that a seismic event has occurred. The accelerometers measure the basic ground motion as well as seismic excitation, and inputs this information to the data recorder. The two accelerometers are identical except for location. The Omnitrigger and one accelerometer are located in the High Pressure Coolant Injection (HPCI) room at the reactor building subbasement level, and the other accelerometer is located at the base of the reactor pressure vessel pedestal.

The Technical Specification for channel calibration requires the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. During the review of testing requirements for replacement of the seismic monitoring system, Detroit Edison identified concerns with the existing channel calibration surveillance. The Omnitrigger and accelerometers are factory calibrated and sealed and the output signal cannot be adjusted in the field. The particular concerns were that the Omnitrigger setpoint, and the triaxial

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accelerometers accuracy, are not specifically verified, and may not satisfy Technical Specification 3.3.7.2. As a result of these concerns, the active seismic monitoring instrumentation was declared inoperable on April 16, 1996, pending an evaluation of the installed system and required testing.

The seismic Omnitrigger setpoint is 0.01g, the triaxial accelerometers have a range of plus or minus 1 g. Existing calibration testing of the Omnitrigger setpoint and the accuracy of the accelerometer consists of the application of a vendor defined voltage input. This corresponds to 0.1g, which produces an expected output signal. For the Omnitrigger, this value exceeds the setpoint value corresponding to 0.01g. For the accelerometers, the present test uses two single input values corresponding to an acceleration of plus or minus 0.1g, but does not measure the full range. Neither test measures output of the device compared to known input accelerations. Review of the current testing determined that this does not meet the Technical Specification definition of channel calibration. As such, this constitutes a missed surveillance for these instruments and resulting inoperability in accordance with Technical Specification 4.0.3.

To verify operability, the Omnitrigger and the HPCI room accelerometer were removed and sent offsite for calibration testing. This testing established that this instrumentation was within acceptable tolerances. They were subsequently returned, reinstalled, and are considered to be fully operable.

The accelerometer located in the drywell has not been tested as it is currently inaccessible during power operation. It will be removed and calibrated during the next refueling outage. Until that time the drywell accelerometer is classified as inoperable, but is functional and in service. The remainder of the seismic monitoring instrumentation is fully operable.

In summary, surveillances for the Omnitrigger and active triaxial accelerometers were discovered to be inadequate, and the calibration of these units was questioned. Subsequent testing of the Omnitrigger and HPCI room accelerometer proved these units were within calibration tolerances, and would have performed their design function in a seismic event. This calibration satisfies the Technical Specification requirements and establishes the operability of these units. Testing of the drywell accelerometer was not performed. It remains functional but inoperable, until testing can be accomplished.

The following commitments are made in this letter:

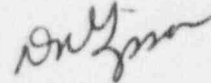
- 1) Surveillance procedures will be revised to ensure accurate calibration testing of the active seismic instrumentation in compliance with Technical Specification 3.3.7.2.
- 2) The accelerometer in the drywell will be properly calibrated.

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These commitments will be completed by the end of the next refueling outage.

For further information please contact Ron Wittschen, Compliance Engineer, at  
(313) 586-1267.

Sincerely,

A handwritten signature in dark ink, appearing to read "Ron Wittschen", is written over the word "Sincerely,".

cc: T. G. Colburn  
M. J. Jordan  
H. J. Miller  
T. Vogel  
Region III