Joseph H. Plona
Site Vice President

6400 N. Dixie Highway, Newport, MI 48166
Tel: 734.586.5910 Fax: 734.586.4172

DTE Energy

10 CFR 50.73

May 19, 2008
NRC-08-0040

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

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

Subject: Submittal of Licensee Event Report No. 2008-003,
"Control Center Pressure Boundary Door Blocked Open"

Pursuant to 10 CFR 50.73(a)(2)(v)(D) and 50.73(a)(2)(i)(B), Detroit Edison is hereby submitting the enclosed Licensee Event Report (LER) No. 2008-003. This LER documents a March 26, 2008 discovery that a control center pressure boundary door has been blocked open without using the Technical Specification provisions.

No new commitments are made in 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,

Joseph H. Plona

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

IE22
NRR

NRC FORM 366 (9-2007) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: No. 3150-0104 Expires 8/31/2010

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Fermi 2	05000341	1 OF 4

4. TITLE
Control Center Pressure Boundary Door Blocked Open

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
03	26	2008	2008	- 003 -	00	05	19	2008	FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE
1

10. POWER LEVEL
100%

11. THIS REPORT SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☒ 50.73(a)(2)(v)(D)	Specify in abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
Sam Hassoun – Licensing Supervisor	(734) 586-4287

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On March 26, 2008, at 1045 hours, it was recognized that Auxiliary Building Door R5-6 is part of the Control Center (CC) pressure boundary. The door had been blocked open since March 24, 2008, at approximately 1400 hours, to allow for passing a drain hose that was being used to drain the Division 1 chiller of the Control Center Air Conditioning (AC) System. Upon realizing that the door is part of the CC pressure boundary, Technical Specification (TS) 3.7.3, Condition B.1 was entered for two inoperable Control Room Emergency Filtration (CREF) Subsystems due to inoperable control room boundary. Actions were taken to promptly remove the drain hose and close the door. The TS Condition was exited on March 26, 2008, at 1120 hours.

The primary cause of this event was attributed to missing information in one of the maintenance procedures used in the preparation work for performing maintenance activity on the Division 1 chiller of the Control Center AC System. The procedure identified other doors as control center pressure boundary barriers; however, door R5-6 was not identified as such.

Review of the maintenance procedure was performed to ensure that all other control center pressure boundary doors are properly identified. All control center pressure boundary doors were verified closed. During the period of time the door was blocked open, plant conditions did not require isolation of the control room and shifting CREF into the recirculation mode; therefore, this event did not result in an appreciable reduction of plant safety and reliability.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Fermi 2	05000341	2008	-- 003 --	00	2 OF 4

17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

Initial Plant Conditions:

Mode 1

Reactor Power 100 percent

Description of the Event

On March 26, 2008, at 1045 hours, it was recognized that Auxiliary Building [NF] Door [DR] R5-6 is part of the Control Center (CC) [NA] pressure boundary. The door had been blocked open since March 24, 2008, at approximately 1400 hours, to allow for passing a drain hose that was being used to drain the Division 1 chiller [CHU] of the Control Center Air Conditioning (AC) [ACU] System. Upon realizing that the door is part of the CC pressure boundary, Technical Specification (TS) 3.7.3, Condition B.1 was entered for two inoperable Control Room Emergency Filtration (CREF) [VI] Subsystems due to inoperable control room boundary. Actions were taken to promptly remove the drain hose and close the door. The TS Condition was exited on March 26, 2008, at 1120 hours.

The CREF System provides a radiologically controlled environment from which the plant can be safely operated following a Design Basis Accident (DBA). The system is designed to maintain the control room environment for a 30 day continuous occupancy after a DBA without exceeding 5 rem whole body dose or its equivalent to any part of the body. Upon receipt of initiation signal(s), indicative of conditions that could result in radiation exposure to control room personnel, the CREF System automatically switches to the recirculation mode of operation to prevent infiltration of contaminated air into the control room. The recirculation mode pressurizes the control room to between 0.125 and 0.375 inches water gauge to prevent infiltration of air from surrounding areas. The control room boundary must be maintained to ensure that the CREF system is operable and its safety function can be performed.

The control center envelope consists of seven zones including the main control room, relay room, computer room, office, conference room, cable spreading room, and the mechanical equipment room. During an emergency, the control center envelope is isolated from all other areas of the plant to maintain control room habitability. The CREF System processes control center air and makeup air through High Efficiency Particulate Air (HEPA) and charcoal filters to prevent intrusion and to provide continuous removal of contaminants during a radiation release. Design basis analysis assumes that no more than 173 cubic feet per minute (CFM) of unfiltered inleakage is introduced into the control center envelope during an emergency. Door R5-6 is part of the mechanical equipment room envelope. With the door blocked open, air communication between the control center envelope and the Auxiliary Building atmosphere is not restricted, and the volume of outside makeup air required to maintain the target positive pressure in the control center may increase. This configuration created the potential for an increase in the unfiltered inleakage into the control center envelope and for makeup air flow to be greater than the design basis analysis limit. Unfiltered inleakage could increase due to the change in differential pressure distribution in the control center envelope. Since outside air is assumed to be contaminated post DBA, greater makeup air could result in additional dose to the control room operators. Therefore, it was possible to exceed the 5 rem dose limit to the control room occupants.

Significant Safety Consequences and Implications

The CREF System is required to be operable to control operator exposure during and following a DBA. The system provides a radiologically controlled environment for the operators to maintain their dose within the regulatory limits. The accident analysis assumes a worst case scenario in which core damage has already occurred and resulted in the release of radioactive contaminants. No quantifiable increase in Core Damage Frequency (CDF) would result from the event reported in this LER since conditions that would result in control room operator dose to exceed regulatory limits assume core damage has already occurred. Similarly, the Large Early Release Frequency (LERF) is not affected by the function performed by the CREF system.

During the time door R5-6 was blocked open, plant conditions did not require the isolation of the control center or shifting the CREF system into the recirculation mode.

The latest control center tracer gas testing resulted in a measurement of no more than 59 CFM unfiltered inleakage into the control center envelope. This value is significantly lower than the assumed design basis analysis unfiltered inleakage of 173 CFM.

With door R5-6 blocked open, higher than normal makeup air may be drawn from outside the building to maintain the required positive pressure in the control room. However, makeup air flow is filtered through the emergency makeup filter and the recirculation filter to remove radioactive contamination before it is directed to the control center.

In addition, control room dose analysis predicts that the maximum 30 day operator dose following a DBA is about 3.76 rem Total Effective Dose Equivalent (TEDE). The analysis conservatively assumes that primary containment, Main Steam Isolation Valve (MSIV), and primary containment bypass leakages are at maximum allowable limits and does not use measured leakage rates. The dose is only about 75% of the 5 rem regulatory limit; therefore, higher filtered makeup flow is not expected to result in operator dose in excess of the regulatory limit.

Based on the assumptions above, the event reported in this LER had a low potential to cause operator dose to exceed regulatory limits. The event had no significant adverse effect on the health and safety of the public and no appreciable reduction in plant safety and reliability.

This event is being reported under 50.73(a)(2)(v)(D), as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident. It is also being reported under 50.73(a)(2)(i)(B) as a condition which was prohibited by the TS since the time during which the control room boundary was inoperable exceeded the 24 hours Completion Time specified in TS 3.7.3, Condition B. A non-emergency 8 hour report was made to the NRC in accordance with 10 CFR 50.72 on March 26, 2008, at 1545 hours (Event Number 44099).

Cause of the Event

The primary cause of this event was attributed to missing information in one of the maintenance procedures used in the preparation work for performing maintenance activity on the Division 1 chiller of the Control Center Air Conditioning System. The procedure identified other doors as control center pressure boundary barriers; however, door R5-6 was not identified as such. Contributing causes include knowledge deficiency in understanding the effect of breaching barriers on plant ventilation systems; and the inadequate application of human performance tools, e.g., signs or labels, to help in reminding plant personnel of significant barrier functions.

Corrective Actions

Once it was realized that Door R5-6 is part of the control center pressure boundary, steps were taken to expeditiously close the door. A review of the maintenance procedure that did not identify this door's control center pressure boundary function was performed to ensure that all other control center pressure boundary doors are properly identified. All control center pressure boundary doors were verified closed.

This event has been documented in the Fermi 2 corrective action program. A root cause evaluation has been performed to address the event and develop pertinent corrective actions. Additional evaluation and corrective actions are being performed in accordance with the corrective action program. Actions will be determined, tracked and implemented commensurate with their safety significance and in accordance with the program guidelines.

Additional Information

A. Failed Components: None.

B. Previous LERs on Similar Problems:

LER 2002-003: This LER describes an event that occurred on June 27, 2002. A work request was initiated to repair a failed outboard return air fan bearing on the Division 1 of CREF. The work request identified the need to open an access panel in the fan ductwork. The access panel had to be unlocked and opened to allow access to the fan outboard bearing. The work request was reviewed and authorized by Operations. At 2152 hours, control room pressure increased and control room pressure alarms were received. A Nuclear Operator was dispatched to evaluate the Division 1 CREF system maintenance activities and noted that the access panel was open. Evaluation of the pressure response of the Division 2 CREF system identified that opening the access panel on the Division 1 Return Air Fan duct work resulted in unfiltered, bypass leakage into the Division 2 CREF system. Technical Specification 3.0.3 was entered due to both divisions of CREF system being inoperable. Immediate actions were taken to close the access panel and reestablish CREF system ducting integrity. Analysis of the event identified deficient knowledge of CREF system divisional interrelationship and inadequate implementation of the work control process as the causes of this event.