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DTE Energy



10 CFR 50.73

March 18, 2013
NRC-13-0007

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

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

Subject: Licensee Event Report (LER) No. 2013-001

Pursuant to 10 CFR 50.73(a)(2)(v)(C), DTE Electric is submitting LER
No. 2013-001, Loss of Secondary Containment function.

No commitments are being made in this LER.

Should you have any questions or require additional information, please contact
Mr. Zachary W. Rad of my staff at (734) 586-5076.

Sincerely,

A handwritten signature in black ink, appearing to be "JTC", written over a white background.

Enclosure

cc: NRC Project Manager
NRC Resident Office
Reactor Projects Chief, Branch 5, Region III
Regional Administrator, Region III
Supervisor, Electric Operators,
Michigan Public Service Commission

LICENSEE EVENT REPORT (LER)
 (See reverse for required number of digits/characters for each block)

1. FACILITY NAME Fermi 2	2. DOCKET NUMBER 05000341	3. PAGE 1 OF 4
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4. TITLE
Loss of Secondary Containment Function

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
01	22	2013	2013	- 001	- 00	03	18	2013	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE 1	11. THIS REPORT SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)										
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)							
10. POWER LEVEL 68 Percent	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)							
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)							
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)							
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)							
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)							
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER							
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in abstract below or in NRC Form 366A							

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME Fermi 2 / Robert J. Salmon – Supervisor, Nuclear Compliance	TELEPHONE NUMBER (Include Area Code) (734) 586 - 4273
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO			

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

On January 22, 2013, at approximately 0113 hours EST, during startup of the Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) system, with the Standby Gas Treatment System operating, Secondary Containment pressure went positive for 27 seconds, reaching approximately +0.15 inches of water column (WC). The RBHVAC Center Exhaust Fan discharge damper appears to have opened after the Supply Fan discharge damper opened contrary to design, causing the Secondary Containment pressure increase. The System was returned to normal with two RBHVAC trains running and Standby Gas Treatment System shutdown and in standby. Reactor building pressure stabilized at less than -0.125 inches WC. The causes of this event appear to be delayed operation of the center RBHVAC exhaust fan discharge damper and relay timing out of tolerance for the RBHVAC Center Supply and Exhaust fan dampers. Work Management procedures are being followed to troubleshoot the actuator for the discharge damper and the supply and exhaust fan relay timing. This event has been entered into the Fermi 2 Corrective Action Program. Investigation continues and could result in additional corrective actions.

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NARRATIVE

Initial Plant Conditions:

Mode 1
Reactor Power 68 percent

Description of the Event

On January 22, 2013, at approximately 0113 hours EST, with the Standby Gas Treatment System (SGTS) [BH] operating to maintain Secondary Containment [NH] pressure less than -0.125 inches water column (WC) and while starting up the Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) [VA] system, Secondary Containment pressure exceeded the Technical Specification Surveillance Requirement pressure of -0.125 inches WC for approximately 27 seconds, reaching approximately +0.15 inches WC.

Technical Specification Limiting Condition for Operation 3.6.4.1, Condition B, Secondary Containment inoperable was entered (four hour action to restore Secondary Containment), and exited when Secondary Containment pressure was restored to less than -0.125 inches WC. The Emergency Operating Procedures (EOPs) were entered based on high Secondary Containment pressure. EOPs were exited at 0120 hours EST.

The RBHVAC system consists of three parallel, fifty-percent capacity supply fans [FAN], and three parallel, fifty-percent capacity exhaust fans [FAN], each with associated discharge dampers [DMP]. The RBHVAC system maintains the Secondary Containment at a slight negative pressure, approximately -0.25 inches WC, with respect to outside atmospheric pressure to prevent exfiltration of potentially contaminated air to the environment.

The normal operation of the RBHVAC system is for two of the three supply and exhaust fan pairs to be running. The supply and exhaust fans are manually controlled from the control room. The supply and exhaust discharge dampers automatically open following a 20 second delay after the associated fan is started. The exhaust fan in each pair is started first to maintain a negative pressure in Secondary Containment during system startup followed by the supply fan two seconds later. Modulating dampers [DMP] on the exhaust fan inlets maintain approximately -0.25 inches WC in the Secondary Containment during system operation.

The System was returned to normal with two RBHVAC trains operating. Reactor building pressure stabilized at less than -0.125 inches WC and the SGTS was shutdown. In this event, the RBHVAC center exhaust fan discharge damper likely opened after the supply fan discharge damper, causing the Secondary Containment pressure increase as evidenced by observed delayed operation of the discharge damper post event testing.

The loss of Secondary Containment function is reportable under 10 CFR 50.73(a)(2)(v)(C) as an event or condition that could have prevented the fulfillment of a safety function needed to control the release of radioactive material. An 8 hour NRC event notification (No. 48689) was previously made to the NRC based on meeting the reporting criteria of 10 CFR 50.72(b)(3)(v)(C).

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Significant Safety Consequences and Implications

Secondary containment, in conjunction with the SGTS, is designed to minimize any ground level release of radioactive material which may result from an accident. There are two principal accidents for which Secondary Containment Integrity is assumed, a loss of coolant accident (LOCA) and a fuel handling accident. With the plant operating in Mode 1, only the LOCA was applicable at the time of the event.

The standby RBHVAC fans were immediately available. On a LOCA signal (high drywell pressure or low reactor vessel water level) the RBHVAC system would have automatically tripped and would have been isolated from the Secondary Containment. The accident scenario assumes a loss of offsite power which delays the subsequent start of the SGTS for 33 seconds. Manual Secondary Containment isolation capability from the Main Control Room [NA] could also be used. The SGTS is designed to maintain the reactor building at a negative pressure relative to the outside atmosphere during transient and accident conditions. It would have automatically started on the same conditions that trip the RBHVAC system. Therefore, this event did not pose an actual threat to the public health or safety.

Cause of the Event

The causes of this event appear to be delayed operation of the center RBHVAC exhaust fan discharge damper and relay timing out of tolerance for the RBHVAC Center Supply and Exhaust Fan. The delayed operation of the exhaust fan discharge damper likely prevented it from opening first in order to maintain a negative pressure in the Secondary Containment. The relay timing associated with the supply and exhaust fan discharge damper opening has also been identified as an apparent cause. A contributing cause is the RBHVAC fan start logic being less than adequate.

Corrective Actions

The System was returned to normal with two RBHVAC trains operating. Reactor building pressure stabilized less than -0.125 inches WC and the SGTS was shutdown.

Testing was performed that identified the center RBHVAC exhaust fan discharge damper operation was delayed. Work Management procedures are being followed to troubleshoot the actuator for the discharge damper and the supply and exhaust fan relay timing.

This event has been entered into the Fermi 2 Corrective Action Program. Investigation continues and could result in additional corrective actions.

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Additional Information

- A. Failed Component: None
 Component:
 Function:
 Manufacturer:
 Model Number:
 Failure Cause:
- B. Previous Licensee Event Reports (LERs) on Similar Problems:
 None within the previous five years.