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DTE Energy



January 22, 2014
NRC-14-0004

10 CFR 50.73

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. 2013-003

Pursuant to 10 CFR 50.73 (a)(2)(v)(C), DTE Electric Company is submitting LER No. 2013-003, Loss of Secondary Containment Function Due to Exceedance of Technical Specification Required Vacuum Pressure.

No commitments are being made in this LER.

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

Sincerely,



Enclosure

cc: NRC Project Manager
NRC Resident Office
Reactor Projects Chief, Branch 5, Region III
Regional Administrator, Region III
Michigan Public Service Commission
Regulated Energy Division (kindschl@michigan.gov)

Enclosure to
NRC-14-0004

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

LER 2013-003, Loss of Secondary Containment Function Due to Exceedance
of Technical Specification Required Vacuum Pressure

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

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 FOIA/Privacy Service Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.resource@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.

1. FACILITY NAME

Fermi 2

2. DOCKET NUMBER

05000341

3. PAGE

1 OF 3

4. TITLE

Loss of Secondary Containment Function Due to Exceedance of Technical Specification Required Vacuum Pressure

5. EVENT DATE

MONTH	DAY	YEAR
11	24	2013

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO.
2013	- 003	- 00

7. REPORT DATE

MONTH	DAY	YEAR
01	22	2014

8. OTHER FACILITIES INVOLVED

FACILITY NAME	DOCKET NUMBER
	05000
FACILITY NAME	DOCKET NUMBER
	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) |
| <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 / Alan I. Hassoun – Supervisor, Nuclear Licensing

TELEPHONE NUMBER (Include Area Code)

(734) 586 - 4287

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
B	VA	TRP	S039	Y					

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 November 24, 2013, at approximately 00:01 hours EST, during normal plant operations, the non-safety related Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) system tripped on low steam coil heater temperature. Secondary Containment differential pressure exceeded the Technical Specification (TS) Surveillance Requirement limit of -0.125 inches water column (WC), reaching a maximum of +0.08 inches WC. At 00:04 hours EST, the Standby Gas Treatment System (SGTS) was started and Secondary Containment differential pressure decreased to less than -0.125 inches WC. The RBHVAC system tripped due to lack of steam flow through a heating coil caused by inadequate draining of the downstream steam trap. Investigation revealed the presence of some corrosion and a cracked drain seat in the associated steam drain. The degraded steam drain was then replaced and tested. RBHVAC was returned to normal operation and SGTS was shutdown and returned to standby at 23:46 hours EST on November 24, 2013. Preventive maintenance is being scheduled to inspect, and clean or replace the RBHVAC steam traps and strainers.

With Secondary Containment differential pressure exceeding -0.125 inches WC, TS Surveillance Requirement 3.6.4.1.1 was not met and Secondary Containment was declared inoperable. No other degradation of Secondary Containment existed at the time of the event. This event was reported per the guidance of NUREG-1022, Rev. 3, section 3.2.7, as a loss of Safety Function. There were no radiological releases associated with this event.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

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NARRATIVE

Initial Plant Conditions:

Mode 1
Reactor Power 100 percent

Description of the Event

On November 24, 2013, at approximately 00:01 hours EST, the non-safety related Reactor Building Heating Ventilation and Air Conditioning (RBHVAC) [VA] system tripped due to improper drainage of a steam coil heater [CL] through its steam trap. Secondary Containment [NH] differential pressure rose above -0.125 inches water column (WC), reaching a maximum of +0.08 inches WC. At 00:04 hours EST, the Standby Gas Treatment System (SGTS) was manually started and Secondary Containment differential pressure decreased to less than -0.125 inches WC.

Technical Specification Surveillance Requirement (SR) 3.6.4.1.1 verifies that Secondary Containment vacuum is greater than or equal to 0.125 inches of vacuum water gauge. Limiting Condition for Operation 3.6.4.1, Condition B, Secondary Containment inoperable was entered due to not meeting SR 3.6.4.1.1, and later 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 differential pressure and later exited at 00:09 hours EST.

The RBHVAC system has 14 steam coil heaters and 14 corresponding low temperature switches. The switches monitor the temperature of the heater coils to ensure they do not freeze. If any switch trips on low temperature, the RBHVAC system automatically trips. In this event, one of the switches tripped on low temperature (35°F decreasing) causing a trip of the RBHVAC system.

Upon determination of the cause of the trip and replacement of the steam trap, the RBHVAC system was restarted and the SGTS shutdown at 23:46 hours EST on November 24, 2013.

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. 49575) was previously made to the NRC based on meeting the reporting criteria of 10 CFR 50.72(b)(3)(v)(C).

Significant Safety Consequences and Implications

The purpose of SR 3.6.4.1.1 is to verify Secondary Containment integrity. This SR ensures that the Secondary Containment boundary is sufficiently leak tight to preclude exfiltration under expected wind conditions.

The non-safety related RBHVAC system is not relied upon to mitigate consequences of an accident. Secondary Containment, in conjunction with the SGTS, is designed to minimize release of radioactive material which may result from an accident.

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The two principal accidents for which Secondary Containment integrity is assumed are a loss of coolant accident (LOCA) and a fuel handling accident (FHA). Neither of these accidents occurred coincident with this event.

The SGTS is designed to start automatically to maintain the reactor building at a negative pressure relative to the outside atmosphere during transient and accident conditions. The SGTS can also be manually started from the Main Control Room [NA]. During this event, Division 1 of SGTS was manually started (no transient or accident had occurred that would automatically start SGTS) and restored the required Secondary Containment vacuum approximately 3 minutes after RBHVAC tripped. There were no radiological releases associated with this event. Therefore, this event did not pose an actual threat to the health and safety of the public.

Cause of the Event

RBHVAC tripped on low heater coil temperature due to lack of steam flow through a heating coil caused by improper draining of the downstream steam trap. Investigation revealed corrosion and a cracked drain seat in the associated steam drain.

Corrective Actions

The malfunctioning heating coil steam trap was replaced and tested. The RBHVAC system was returned to normal operation. Secondary Containment differential pressure was stabilized at less than -0.125 inches WC, and the SGTS was shutdown at 23:46 hours EST on November 24, 2013.

Since this event was potentially caused by a corrosion related failure, preventive maintenance is being scheduled to inspect, and clean or replace the RBHVAC steam traps and strainers.

Additional Information

- A. Failed Component: Steam Drain
Component: Steam Trap [TRP] T4100D043N
Function: Discharge condensate as it is formed
Manufacturer: SPIRAX SARCO
Model Number: FT-15, 3/4" – 1"
Failure Cause: Corrosion and a cracked drain seat

- B. Previous Licensee Event Reports (LERs) on Similar Problems:

LER 2013-001 also involved a loss of Secondary Containment function due to an RBHVAC system equipment malfunction. However, the cause of that event was related to damper sequencing. Therefore, the corrective actions for that event would not have precluded this event.