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10 CFR 50.73

November 15, 2016
NRC-16-0066

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. 2016-008

Pursuant to 10 CFR 50.73(a)(2)(v)(C), DTE Electric Company (DTE) is submitting LER No. 2016-008, Past Instances of Secondary Containment Pressure Exceeding Technical Specification Due to Adverse Weather.

No new commitments are being made in this LER.

Should you have any questions or require additional information, please contact Mr. Scott A. Maglio, Manager – Nuclear Licensing, at (734) 586-5076.

Sincerely,

Keith J. Polson
Site Vice President

Enclosure: Licensee Event Report No. 2016-008, Past Instances of Secondary Containment Pressure Exceeding Technical Specification Due to Adverse Weather

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-16-0066**

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

**Licensee Event Report (LER) No. 2016-008, Past Instances of Secondary Containment
Pressure Exceeding Technical Specification Due to Adverse Weather**



LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form
<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/>)

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 and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by 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

05000 341

3. PAGE

1 OF 4

4. TITLE

Past Instances of Secondary Containment Pressure Exceeding Technical Specification Due to Adverse Weather

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
09	16	2016	2016	008	00	11	15	2016	N/A	05000
									N/A	05000

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

1	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
100	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> 73.77(a)(1)
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 73.77(a)(2)(i)
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input type="checkbox"/> 73.77(a)(2)(ii)
		<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> OTHER	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Fermi 2 / Scott A. Maglio – Manager, Nuclear Licensing	TELEPHONE NUMBER (include Area Code) (734) 586-5076
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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
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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 September 16, 2016, a past reportability review identified that there were multiple instances during the past three years where the Technical Specification (TS) for the Secondary Containment (SC) pressure boundary was not met due to known effects of high winds on the Reactor Building (RB). The TS Surveillance Requirement (SR) is to maintain SC vacuum greater than or equal to 0.125 inches of vacuum water gauge for SC operability. The Fermi 2 Updated Final Safety Analysis Report Section 6.2.1.2.2.3 recognizes that high winds may result in a momentary change to the indicated differential pressure between SC and the outside atmosphere. Between September 1, 2013, and September 30, 2016, a review of digital SC pressure recorder data identified numerous instances during which digital SC pressure recorder data showed that the TS requirement for SC vacuum was not met for at least one second. The highest recorded pressure was +1.269 inches water gauge. SC vacuum promptly returned within the TS SR limit in each occurrence without Operator action. The Main Control Room alarm was not received in any of these instances, therefore, the duration of each instance was less than 30 seconds. There were no radiological releases associated with any of these occurrences. The recognized cause of these occurrences is high winds impinging on the side of the RB. In response to these past occurrences and similar occurrences described in other recent Licensee Event Reports, Fermi 2 has conducted industry benchmarking and will evaluate changes to SC pressure recorder configuration and the site's licensing basis to address this issue.



**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

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1. FACILITY NAME Fermi 2	2. DOCKET NUMBER 05000-341	3. LER NUMBER		
		YEAR 2016	SEQUENTIAL NUMBER 008	REV NO. 00

NARRATIVE

INITIAL PLANT CONDITIONS

Mode – 1
Reactor Power – 100 percent

There were no structures, systems, or components (SSCs) that were inoperable at the start of this event that contributed to this event.

The initial plant conditions noted above refer to the plant conditions on September 16, 2016, when the past reportability review identified a reportable condition.

DESCRIPTION OF THE EVENT

On September 16, 2016, while operating in Mode 1 at 100 percent reactor power, a past reportability review associated with the corrective actions for Licensee Event Reports (LERs) 2016-003, 2016-004, and 2016-007 identified numerous instances during the past three years where the Technical Specification (TS) for the Secondary Containment (SC) [[NH]] pressure boundary was not met. The past reportability review analyzed data downloaded from the digital SC pressure recorders [[PR]]. TS Surveillance Requirement (SR) 3.6.4.1.1 requires that SC vacuum be greater than or equal to 0.125 inches vacuum water gauge for SC operability.

Section 6.2.1.2.2.3 of the Fermi 2 Updated Final Safety Analysis Report (UFSAR) states that high winds may create a negative pressure change on the leeward side of the Reactor Building (RB) [[NG]], which results in a higher indicated RB pressure. The Main Control Room (MCR) [[NA]] alarm [[PA]] for SC vacuum is designed to activate only when SC vacuum remains outside the TS SR limit for 30 seconds in order to prevent nuisance alarms due to wind effects.

Between September 1, 2013, and September 30, 2016, there were numerous instances during which digital SC pressure recorder data showed that the TS SR for SC vacuum was not met for at least one second. The highest recorded pressure was +1.269 inches water gauge. Most instances where the TS SR limit for SC vacuum was not met were 1-2 seconds in duration. In each case, when the wind subsided, SC vacuum was restored to within the TS SR limit prior to the alarm activating without requiring any Operator action. Therefore, the duration of each instance was less than 30 seconds. These SC pressure indication changes were solely due to wind effects. There were no appreciable changes of SC absolute pressure during these instances. The structural integrity of SC was maintained during each instance. This is verified by the momentary nature of the differential pressure indication spikes.

In the MCR, the digital SC pressure recorders capture and display a single data point every second. Therefore, in order to observe a momentary spike in indicated SC pressure, an Operator would have to be looking directly at this display at the time the indicated pressure exceeded the TS SR limit. The events in LERs 2016-003, 2016-004, and 2016-007, were identified and reported because an Operator observed the change in SC vacuum on this display and declared SC inoperable for a brief period. The instances described in this LER were not observed by Operators, and therefore, SC was not declared inoperable at the time, no Event Notification was made at the time, and no LER was previously submitted regarding these instances.



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CONTINUATION SHEET**

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1. FACILITY NAME	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Fermi 2	05000- 341	2016	008	00

NARRATIVE

This LER is being submitted based on meeting the reporting criteria of Title 10 Code of Federal Regulations (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. Because the instances described in this LER occurred in the past and there was no loss of safety function at the time of discovery, no Event Notification was made under the corresponding requirement in 10 CFR 50.72(b)(3)(v)(C).

SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences or radiological releases associated with these events. At no time during these occurrences was there a potential for endangering the public health and safety.

There are two divisions to monitor SC pressure. Each division has four pressure transmitters [[PT]] located on the RB fifth floor, one on each of the four RB walls, with a pressure probe that penetrates the wall to the outside to measure RB differential pressure with respect to outside. The recorder indicates the highest pressure of the four inputs from the transmitters. Using the equation provided in Section 6.2.1.2.2.3 of the Fermi 2 UFSAR, wind speeds of 30 to 60 miles per hour (mph) on the RB result in an external pressure change of -0.27 to -1.07 inches water gauge on the leeward side of the building. The negative change on the leeward side of the building results in a higher indicated RB pressure.

The MCR alarm for SC pressure was not received during any of these instances; therefore, the duration of the longest single instance was less than 30 seconds before SC vacuum was returned to within the TS SR limit. The highest recorded pressure was +1.269 inches water gauge.

The specified safety function of the SC is to contain, dilute, and hold up fission products that may leak from primary containment following a Design Basis Accident (DBA). In conjunction with operation of the Standby Gas Treatment System (SGTS) [[BH]] and closure of certain valves [[V]] whose lines penetrate the SC, the SC is designed to reduce the activity level of the fission products prior to release to the environment and to isolate and contain fission products that are released during certain operations that take place inside primary containment, when primary containment is not required to be OPERABLE, or that take place outside primary containment. It is possible for the pressure in the control volume to rise relative to the environmental pressure (e.g., due to pump [[P]] and motor [[MO]] heat load additions). To prevent ground level exfiltration while allowing the SC to be designed as a conventional pressure, the SC requires support systems to maintain the control volume pressure at less than the external pressure. For the SC to be considered OPERABLE, it must have adequate leak tightness to ensure that the required vacuum can be established and maintained. In every event described in this LER, the structural integrity (i.e., leak tightness) of the SC was re-confirmed when SC vacuum was restored to greater than 0.125 inches vacuum water gauge in less than 30 seconds without Operator action when the wind subsided.

In Chapter 15 of the UFSAR, RBHVAC is assumed lost at the onset of a loss of coolant accident (LOCA) concurrent with a loss of offsite power. As a result, calculations show that the SC would be pressurized until the SGTS restores vacuum. If the DBA LOCA for SC concurrent with a Loss of Offsite Power had occurred during the time when the SC pressure TS SR limit was exceeded, the SC was sufficiently leak tight such that the SGTS would still have established and maintained vacuum greater than the TS required value.



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		YEAR 2016	SEQUENTIAL NUMBER 008	REV NO. 00

NARRATIVE

The radiological consequences of the DBA LOCA for SC contained in Chapter 15 of the Fermi 2 UFSAR result in doses that are below 10 CFR 50.67. The SC is assumed to be at 0.125 inches vacuum water gauge at the onset of the LOCA. For these particular events, had the DBA LOCA for SC actually occurred, the increase in magnitude of radiological dose as a result of increased draw-down time from the highest recorded pressure of +1.269 vice -0.125 inches water gauge for less than 30 seconds, would be minimal and negated by several very conservative assumptions in the existing analysis (e.g., 100% exfiltration from SC during the first 15 minutes of drawdown with SGTS in operation, 10% exfiltration from SC with SGTS in operation throughout the remaining 30 day duration of the accident, no holdup time in SC throughout the 30 day duration of the accident, and all exfiltration and filtered releases are at ground level).

CAUSE OF THE EVENT

The momentary changes in indicated SC pressure described in this LER are attributed to the effects of wind on the RB. Analysis of the digital SC pressure recorder data showed a correlation between days with a higher number of instances where the SC pressure TS SR was not met and days with sustained high winds on-site. As described earlier, UFSAR calculations demonstrate that wind gusts of between 30 and 60 miles per hour (mph) are sufficient to cause momentary indicated loss of SC even with no other contributing causes.

CORRECTIVE ACTIONS

No corrective actions were necessary to restore compliance with the TS SR 3.6.4.1.1 as pressure was restored in each instance at the time of the event without Operator action when the wind subsided.

Corrective Actions for similar events were identified in LERs 2016-003, 2016-004, and 2016-007, including adopting Technical Specification Task Force Traveler (TSTF) 551, "Revise Secondary Containment Surveillance Requirements," when it is approved, to eliminate declaring SC inoperable for similar events. Additional corrective actions in response to these past occurrences include benchmarking how other sites monitor and evaluate environmental effects on SC pressure, evaluating potential changes to how SC pressure is monitored at Fermi 2, and evaluating a potential revision to the TS Bases based on industry benchmarking.

PREVIOUS OCCURRENCES

LERs 2016-003, 2016-004, and 2016-007 reported loss of SC due to wind based on Operators declaring SC inoperable at the time of the occurrences. The purpose of this LER is to capture occurrences where a review of data from the digital SC pressure recorders indicated SC vacuum was not maintained within the TS SR limit but the momentary change in pressure was not observed by Operators, and therefore, SC was not declared inoperable at the time. Therefore, these previous occurrences would not have been able to prevent subsequent occurrences nor could they have prevented the occurrences described in LERs 2016-003, 2016-004, and 2016-007. Corrective actions in response to these three previous LERs are still in progress, and therefore, could not have prevented the instances included in this LER.