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10 CFR 50.73

March 1, 2019
NRC-19-0011

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

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

Subject: Licensee Event Report (LER) No. 2019-001

Pursuant to 10 CFR 50.73(a)(2)(v)(C) and (D), DTE Electric Company (DTE) is submitting LER No. 2019-001, Unplanned Loss of Safety Function of Gland Seal Exhauster Trip During Planned Maintenance Due to Inadequate Procedure.

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,

A handwritten signature in black ink, appearing to read "P. Fessler", written over a horizontal line.

Paul Fessler
Senior Vice President and CNO

Enclosure: Licensee Event Report No. 2019-001, Unplanned Loss of Safety Function of Gland Seal Exhauster Trip During Planned Maintenance Due to Inadequate Procedure

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-19-0011**

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

**Licensee Event Report (LER) No. 2019-001
Unplanned Loss of Safety Function of Gland Seal Exhauster Trip
During Planned Maintenance Due to Inadequate Procedure**

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 Information Services Branch (T-2 F43), 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.

**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/>)

1. Facility Name Fermi 2	2. Docket Number 05000 341	3. Page 1 OF 3
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4. Title Unplanned Loss of Safety Function of Gland Seal Exhauster Trip During Planned Maintenance Due to Inadequate Procedure
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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	01	2019	2019	001	00	03	01	2019	N/A	05000

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)			
2	<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)
10. Power Level	<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)
005	<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 checked="" 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

13. Complete One Line for each Component Failure Described in this Report									
Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
14. Supplemental Report Expected					15. Expected Submission Date				
<input type="checkbox"/> Yes (If yes, complete 15. Expected Submission Date) <input checked="" type="checkbox"/> No									

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

On 1/1/2019, while performing planned maintenance on the Feedwater Distributed Control System (FW DCS) at 5 percent power, it was discovered that the automatic trip instrumentation of the Gland Seal Exhauster (GSE) was inoperable. The automatic GSE trip function is a documented assumption in the safety analysis for the Control Rod Drop Accident and is required by Technical Specification (TS) 3.3.7.3 when reactor thermal power is less than or equal to 10 percent. The automatic trip function of the GSE was inoperable for 1 minute 19 seconds.

The impact on the GSE trip function during implementation of the site procedures and the applicable work order was inadequately documented prior to starting the planned maintenance on the FW DCS. The unplanned inoperability of the GSE trip function is reportable under 10 CFR 50.73(a)(2)(v)(C) and (D). There was no adverse impact to public health and safety or to plant employees and there were no radiological releases.

The cause of the GSE trip inoperability resulted from inadequate procedural guidance during planned maintenance on the FW DCS. GSE trip operability was restored automatically by FW DCS without any required actions. Site procedures were revised on or before January 11, 2019 to describe the impact of the FW DCS on the GSE trip and reference the applicable TS.

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

(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 Information Services Branch (T-2 F43), 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	2. DOCKET NUMBER	3. LER NUMBER		
		YEAR	SEQUENTIAL NUMBER	REV NO.
Fermi 2	05000- 341	2019	001	00

NARRATIVE**INITIAL PLANT CONDITIONS**

Mode – 2

Reactor Power – 5 percent

DESCRIPTION OF THE EVENT

On January 1, 2019 at approximately 0454 EST, while the Feedwater Distributed Control System (FW DCS) [[SJ, JK]] was being rebooted under a planned maintenance work order (WO), it was discovered that the required automatic trip instrumentation of the Gland Seal Exhauster (GSE) [[FAN]] [[TC]] was inoperable. The automatic GSE trip is assumed in the safety analysis for the Control Rod Drop Accident (CRDA) and is required by Technical Specification (TS) 3.3.7.3, "Gland Seal Exhauster (GSE) Trip Instrumentation," when reactor thermal power is less than or equal to 10 percent rated thermal power (RTP).

The automatic trip function of the GSE was inoperable for 1 minute, 19 seconds. No control rod movement occurred while the automatic trip of the GSE was inoperable.

Per TS 3.3.7.3, the GSE trip instrumentation is required to be operable in Modes 1 and 2 when any GSE is in service, any main steam line is not isolated, and reactor thermal power is less than or equal to 10 percent RTP. The GSE trip instrumentation initiates a trip of the GSE breakers following events in which radiation in the main steam lines exceeds a predetermined value. Tripping the GSEs limits the offsite and control room doses in the event of a postulated CRDA. If a postulated CRDA were to occur in Modes 1 or 2 with a GSE in service, the main steam lines not isolated, and with reactor thermal power less than or equal to 10 percent RTP, radiological dose consequences from the CRDA could exceed those considered in the Updated Final Safety Analysis Report (UFSAR). Therefore, the GSE trip is credited to ensure conformance with the radiological evaluation of the CRDA in the UFSAR. Above 10 percent RTP, the postulated effects of a CRDA are not sufficient to cause fuel damage such that the GSE trip is not required.

The TS Limiting Condition for Operation (LCO) 3.3.7.3 Condition B requires GSE trip capability to be restored within 1 hour if lost. During the FW DCS maintenance activity on January 1, 2019, the automatic trip function of the GSE was inoperable for 1 minute, 19 seconds, which met the TS LCO requirement. The GSE trip capability was restored automatically when the FW DCS finished rebooting; no operator action was required.

The reboot of the FW DCS on January 1, 2019 was a planned maintenance activity to restore failed steam line flow signals. The Rod Worth Minimizer (RWM) and GSE control logic both receive feedwater and steam flow digital input from the FW DCS. Site procedures at the time of event explicitly discussed the impact of the FW DCS input on the RWM, but failed to describe the impact on the GSE trip instrumentation. The impact on the RWM was therefore planned before the start of the maintenance activity on the FW DCS and the applicable RWM TS LCO was entered in advance of the FW DCS reset. Since impact on the GSE was not identified in advance, entry into the GSE TS LCO 3.3.7.3 was not performed before beginning the FW DCS maintenance activity. The inoperability of the GSE trip function was immediately recognized when the FW DCS was rebooted based on panel indications in the Main Control Room, and GSE TS LCO 3.3.7.3 was then entered promptly.

The unplanned inoperability of the GSE trip function is reportable under 10 CFR 50.73(a)(2)(v)(C) and (D) as an event or condition that could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radioactive material, and mitigate the consequences of an accident, respectively. An 8-hour non-emergency Event Notification (EN 53811) was previously made under the corresponding requirement in 10 CFR 50.72(b)(3)(v)(C) and (D).

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

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Fermi 2	05000- 341	YEAR 2019	- SEQUENTIAL NUMBER 001	- REV NO. 00

NARRATIVE**SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS**

The GSE trip was declared inoperable for a very short period during the planned maintenance evolution to reset the FW DCS. The reset of FW DCS was a planned maintenance activity and performed in accordance with site procedures. The FW DCS and GSE trip systems both functioned as expected per design. In addition, the relevant TS for RWM and the GSE trip were entered and required actions were performed as applicable. No TS allowable times were exceeded during the event.

As described above, no control rod movement took place during the time that the GSE trip was inoperable. This compensatory measure due to planned inoperability of RWM would reduce the probability of CRDA occurrence. Engineering evaluation of the control rod positions at the time of event determined that the control rod worths were insufficient to result in fuel damage even if a postulated CRDA had occurred.

In addition, although the GSE trip was inoperable, engineering evaluation determined that plant conditions at the time met the regulatory limits even without crediting a GSE trip. Specifically, with the plant at 5.2% power, with control room emergency filtration (CREF) operable, and with a delay time since last shutdown of approximately 24 days, doses were well within regulatory limits without any reliance on the GSE trip. For this reason, the GSE trip was not necessary to perform any safety function during the brief period, 1 minute 19 seconds, when it was inoperable on January 1, 2019 during the FW DCS reset for maintenance.

Therefore, there was no adverse impact to public health and safety or to plant employees. There were no radiological releases.

CAUSE OF THE EVENT

The cause of the unplanned GSE inoperability was the interruption of the steam and feedwater flow signals used by the GSE instrumentation due to the planned maintenance activity for FW DCS reset.

The cause of the GSE trip inoperability being unplanned was that the impact on the automatic trip instrumentation for the GSE, while halting the FW DCS processors, was not fully documented in site procedures and the applicable WO prior to implementation of the WO. Although there were procedures for the FW DCS that included the impact on the RWM, there was no procedural guidance that addressed the impact on the GSE trip function or that referenced the applicable GSE trip TS LCO 3.3.7.3.

There were no component failures during this event.

CORRECTIVE ACTIONS

No corrective action was required to restore GSE trip operability; operability was automatically restored by design upon successful restart of FW DCS.

Station alarm response and system operating procedures were revised on or before January 11, 2019 to explicitly reference the impact of the FW DCS on the GSE trip and provide explicit reference to TS 3.3.7.3. These procedure revisions provide guidance to address the potential impacts of FW DCS maintenance activities on the GSE trip function and relevant TS. An additional future action includes revision of the applicable maintenance procedure.

PREVIOUS OCCURRENCES

No previous site occurrences of reportable conditions were identified with the GSE trip function.