Peter Dietrich Senior Vice President and Chief Nuclear Officer

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10 CFR 50.73

May 15, 2024 NRC-24-0025

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

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

Subject: Licensee Event Report (LER) No. 2024-001

Pursuant to 10CFR50.73(a)(2)(iv)(A), DTE Electric Company (DTE) is submitting LER No. 2024-001, Automatic RPS SCRAM on High RPV Pressure While Attempting to Lower Generator Output During RF-22.

No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact Mr. Eric Frank, Manager – Nuclear Licensing, at (734) 586-4772.

Sincerely,

Peter Dietrich Senior Vice President and Chief Nuclear Officer

Enclosure: Licensee Event Report No. 2024-001, Automatic RPS SCRAM on High RPV Pressure While Attempting to Lower Generator Output During RF-22

cc: NRC Project Manager NRC Resident Office Regional Administrator, Region III

Enclosure to NRC-24-0025

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

Licensee Event Report (LER) No. 2024-001 Automatic RPS SCRAM on High RPV Pressure While Attempting to Lower Generator Output During RF-22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION						N APPRO	APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027					
(04-02-2024)	LICEN (See Page 2 for See NUREG-1022 http://www.nrc.c	required nu R. R.3 for instr gov/reading-r	VENT RE Imber of digits/c ruction and guida m/doc-collections	PORT haracters nce for con s/nuregs/sta	(LER) for each blo npleting this aff/sr1022/r3/	о ск) form <u>()</u>	Estimated learned a estimate Commissi at OMB Commissi not requir displays a	burden per rea re incorporated to the FOIA, I on, Washington Office of Inform on, 725 17th Str ed to respond t currently valid 0	sponse to comply with this mand into the licensing process and fe Library, and Information Collect , DC 20555-0001, or by email to ation and Regulatory Affairs, (315 reat NW, Washington, DC 20503, o, a collection of information unle OMB control number.	atory collection re d back to industry ons Branch (T-6 Infocollects.Resour 0-0104), Attn: Des The NRC may not ss the document r	quest: 80 hours . Send commen A10M), U. S. ce@nrc.gov, an sk Officer for the .conduct or spor equesting or red	 Reported lessons its regarding burden Nuclear Regulatory d the OMB reviewer Nuclear Regulatory nsor, and a person is quiring the collection
1. Facility Nam	10							050	2. Docket Number	:	3. Page	
Fermi 2								052	00341		1 0	F 3
4. Title Automatic F	RPS SCRAM	on High F	RPV Pressure	While A	Attempting	g to Low	er Genera	ator Outp	out During RF-22			
5. Eve	ent Date		6. LER Number	r 7. Report Date			ate	8. Other Facilities Involved				
Month D	ay Year	Year	Sequential Number	Revision No.	Month	Day	Year	Facility Na NA	me		050	ket Number
03 2	23 2024	2024	- 001 -	00	05	15	2024	Facility Nat NA	me		052	:ket Number
9. Operating M	lode	1				10.	Power Leve	el	023			
11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: (Check all that apply)												
10 CFR	Part 20	20.22	03(a)(2)(vi)	10 C	FR Part	50 [50.73	B(a)(2)(ii)(A) 50.73(a))(2)(viii)(A)	7	3.1200(a)
20.2201(b) 20.2203(a)(3)(i)			50.36(c)(1)(i)(A)			50.73	50.73(a)(2)(ii)(B) 50.73(a)			7	3.1200(b)	
20.2201(d)20.2203(a)(3)(ii)			50.36(c)(1)(ii)(A)			50.73	3(a)(2)(iii)	50.73(a)(2)(ix)(A)	7	3.1200(c)	
			50.36(c)(2)			√ 50.7:	50.73(a)(2)(iv)(A) 50.73(a)()(2)(x) 73.1200(d)		
20.2203(a)(2)(i) 10 CFR Part 21			50.46(a)(3)(ii)			50.73	50.73(a)(2)(v)(A) 10 CFR P			Part 73 73.1200(e)		
20.2203(a)(2)(ii) 21.2(c)			50.69(g)			50.7	50.73(a)(2)(v)(B) 73.77(a)(1			(1) 73.1200(f)		
20.2203	3(a)(2)(iii)			50).73(a)(2)(i))(A) [50.73	3(a)(2)(v)(C) 73.77(a)(2)(i)	7	3.1200(g)
20.2203(a)(2)(iv)			50.73(a)(2)(i)(B)			50.73	0.73(a)(2)(v)(D) 73.77(a)(2)(ii)			73.1200(h)		
 20.2203(a)(2)(v)			50.73(a)(2)(i)(C) 50.73(a)(2)(vii)						
OTHER	R (Specify here,	in abstract	, or NRC 366A).								
				12	2. License	e Contac	for this L	.ER				
Licensee Cont Eric Frank	Licensee Contact Eric Frank - Manager, Nuclear Licensing						Phone Number 734			nber (Inclue 34-586-4	r (Include area code) -586-4772	
			13. Complete	One Line	for each C	Compone	nt Failure	Describe	d in this Report	1		
Cause	System	Compon	ent Manufact	turer Rep	ortable to IF	રાક	Cause	Sys	tem Component	Manufact	urer Rep	ortable to IRIS
В	JI	68	X99	9	YES							
	14	. Suppleme	ntal Report Exp	ected		Providence and	l			Month	Day	Year
No Yes (If yes, complete 15. Expected Submission Date)				1 ^{15.}	15. Expected Submission Date							
16. Abstract (Limit to 1326 spaces, i.e., approximately 13 single-spaced typewritten lines)												
At 0004 Pressure (per Ferm was not o occurred for React level foll Condens was the f prevente Fermi 2	EDT on Marc Vessel pressu ni 2 procedur complex, with while loweri tor Pressure F lowing expect er using manu failure of the 1 d the opening has replaced t	ch 23, 202 ure when t e 22.000.0 n systems ing Turbin Igh was e ced post-so ual operati RL16 Bloo of the by he RL16 J	4, with the un the turbine by)4 "Plant Shu responding no e Speed/Loac exceeded and cram feedwat ion of the turb ck Load Rela pass valves, i Block Load R	nit in Mo pass valv tdown fr ormally p l Demand resulted er level r oine bypa y within n automa celay and	de 1 at 23 ves unexp om 25-pe post-scran d which c in an Aut response. ass valves the turbir atic, when I will moc	B-percent pectedly of preent Po n, with the aused a pro- comatic F Decay ho as All Co- ne contro ne contro ne contro ne quired	power, t closed wh wer") to s ne except rise in pre Reactor St eat was re ntrol Rod l system d. ral plant p	he reacto nile attem support s ion of the essure/po CRAM. I emoved b s were ir which re	or automatically scr apting to lower gen hutdown for a refu e pressure control s wer until the React Reactor water level by the Main Steam aserted into the cor sulted in a trip of a es.	rammed du erator outp eling outa; system. Th tor Pressur l was main System to e. The cau bypass va	te to high out to 55 ge. The S e transies te System tained at the Mair se of the lve logic	a reactor MWe SCRAM nt a Setpoint normal SCRAM and

NRC FORM 366A (04-02-2024) U.S. NUCLEAR REGULATOR LICENSEE EVENT REPOR CONTINUATION SHE (See NUREG-1022, R.3 for instruction and guidance for com http://www.nrc.gov/reading-rm/doc-collections/nuregs/sta	APPROVED BY OMB: NO. 3150-0104 EXPIRES: 04/30/2027 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, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, 725 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the collection displays a currently valid OMB control number.								
1. FACILITY NAME	050	2. DOCKET NUMBER	VEAD	3. LER NUMBER	PEV				
Fermi 2		00341	YEAR	NUMBER	NO.				
	052		24	001	- 00				
NARRATIVE									
INITIAL PLANT CONDITIONS									
Mode – 1 Reactor Power – 023									
There were no structures, systems, or components (SSCs) that were inoperable at the start of this event that contributed to this event.									
DESCRIPTION OF THE EVENT									
At 0004 Eastern Daylight Time (EDT) on March 23, 2024, with the unit in Mode 1 at 23-percent power, the reactor automatically scrammed due to high Reactor Pressure Vessel (RPV) pressure when the turbine bypass valves [PCV] (which were being opened per Fermi procedure 22.000.04 "Plant Shutdown from 25-percent Power") unexpectedly closed while attempting to lower Generator [GEN] output to 55 MWe to support shutdown for a refueling outage. The SCRAM was not complex, with systems responding normally post-scram, with the exception of the pressure control system. The transient occurred while lowering Turbine Speed/Load Demand which caused arise in pressure/power until the Reactor Pressure System (RPS) [JD] Set point for Reactor Pressure High was exceeded and resulted in an Automatic Reactor Scram.									
Reactor water level was maintained at normal level following expected post-scram feedwater level response. Decay heat was removed by the Main Steam System [SB] to the main condenser using manual operation of turbine bypass valves. All Control Rods were inserted into the core.									
DESCRIPTION OF THE SYSTEM									
The Main Turbine Bypass System [JI] and Moistur pressure when reactor steam generation exceeds down. It allows excess steam flow from the reactor of the Main Turbine Bypass System and Moisture [SB] rated steam flow. Sudden load reductions w reactor SCRAM. The Main Turbine Bypass System between the main steam isolation valves and the hydraulic unitized actuator. The bypass valves ar as discussed in the Updated Final Safety Analysi closed, and the pressure regulator controls the tur- speed controls or the load limiter restricts steam is opening the bypass valves. When the bypass val	Ire Separator I s turbine requi or to the conde Separator Re ithin the capace m consists of turbine stop v e controlled by is Report (UFS Irbine control v flow to the turl Ives open, the	Reheater (MSR) [RHTR] a rements during unit startu enser without going throug cheater is 30-percent of the city of the steam bypass of two valves connected to a valves. Each of these valves y the Main Turbine Pressu GAR), Section 7.7.1.4. The valves that direct all steam bine, the pressure regulate steam flows from the 52-i	are design p, sudden gh the turb e Nuclear an be acco a 52-inch r es is opera ure Regula e bypass v n flow to th or controls nch manif	ed to control s load reduction ine. The bypa Steam Supply ommodated winnanifold, which ated by a sepa ator Control Sy alves are norm to turbine. If the the system proof of through co	iteam n, and cool ss capacity y System ithout h is arate /stem [JI], nally ne turbine ressure by ponnecting				

The reheating steam flow path to the moisture separator reheater provides an additional steam volume that mitigates a rapid pressure increase (e.g., from a generator load reduction).

piping to the condenser.

NRC FORM 366A U.S. NUCLEAR REGULATOR	RY COMMISSION	APPROVED BY OMB: NO.	3150-0104	EXPIRES	6: 04/30/2027
(04-02-2024) LICENSEE EVENT REPOR CONTINUATION SHE (See NUREG-1022, R.3 for instruction and guidance for com http://www.nrc.gov/reading-rm/doc-collections/nuregs/sta	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, Library, and Information Collections Branch (T-6 A10M), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by email to Infocollects.Resource@nrc.gov, and the OMB reviewer at: OMB Office of Information and Regulatory Affairs, (3150-0104), Attn: Desk Officer for the Nuclear Regulatory Commission, T25 17th Street NW, Washington, DC 20503. The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information number.				
1. FACILITY NAME		2. DOCKET NUMBER		3. LER NUMBER	
Earmi 2	050	00341	YEAR	SEQUENTIAL NUMBER	REV NO.
renn z	052	00011	24	001	- 00
NARRATIVE					
NARRATIVE SIGNIFICANT SAFETY CONSEQUENCES AND Due to the reactor protection system actuation w notification (EN 57046) per 10 CFR 50.72(b)(2)(i Drywell Sumps, Group 15 Traversing In-core Pro Removal – Shutdown Cooling (RHR-SDC) (which reported under 10 CFR 50.72(b)(3)(iv)(A). Also, o initially reported under 10 CFR 50.72(b)(3)(v)(D), event that would have prevented the fulfillment o Unexpected bypass valve closure during operating increase. This created a positive feedback loop v The subsequent turbine control valve closure over the reactor pressure SCRAM set point of 1093 pr pressure reached was 1102 psig. The plant resp 15.2 "Increase in Reactor Pressure", as symptom 100-percent power operation, the response of the Core Thermal Power (CTP)] is consistent with Fe correct set point and plant was recovered using f As such, there was no impact to the health and se CAUSE OF THE EVENT The cause of the SCRAM was the failure of the F prevented the opening of the bypass valves, in a (load) to the Narrow Range Speed Governor (NF modes of operation of the turbine control system main generator at a given setpoint. The remainin Trip. Of these 5 control signa	DIMPLICATION hile critical, this v)(B). Additionation obes (TIPs) (which have a lready is due to the main but later revise f a safety funct on of turbine converted in a safety funct on of turbine converted is an an auto onse was asset as one-minute sig and an auto onse was asset end an auto onse was asset in a safety of the put RL16 Block Loa automatic, wher RSG) signal which that maintains and a modes are l, which correst value gate is in the output of the ation, the press y. om 25-Percent reactor shutdow	IL	a four-hour d isolations) and Grou ontainment inexpected ng criteria l nd resulted iower which reactor pre occurred. T otions provie nalyses typ wer level o re - High RF a heat sink.	r, non-emerge s for Level 3: up 4 Residual I t Isolation Eve lly closing, this because this w d in reactor pre- h further raises sure increas The maximum ded in UFSAF bically assume of this event [2 PS trip function with a signal to an NRSG is one PM or the load nit), Run Up, a is selected to es to the turbin e signal to mai the low value	ncy Group 13 Heat Int is being was not an essure s pressure. e to above reactor & Section 2.5-percent ned at the 2.5-percent ned at the e logic and dd 55 MWe e of 5 d of the and Turbine be in ne. The intain to the low erating on