

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fermi-2										DOCKET NUMBER (2) 0 5 0 0 0 3 4 1 1 OF 0 3										PAGE (3) 1 OF 0 3	
TITLE (4) Reactor Trip Due to West Bypass Valve Closing																					
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)											
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)								
0 9	2 7	8 5	8 5	0 6 6	0 0 1	0 2	5	8 5					0 5 0 0 0								
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)																			
2		20 402(a)				20 405(a)				X 80 73(a)(2)(iv)				73 71(b)							
POWER LEVEL (10)		20 405(a)(1)(i)				80 36(a)(1)				80 73(a)(2)(v)				73 71(a)							
0 1 0 5		20 405(a)(1)(ii)				80 36(a)(2)				80 73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
		20 405(a)(1)(iii)				80 73(a)(2)(ii)				80 73(a)(2)(viii)(A)											
		20 405(a)(1)(iv)				80 73(a)(2)(ix)				80 73(a)(2)(viii)(B)											
		20 405(a)(1)(v)				80 73(a)(2)(iii)				80 73(a)(2)(x)											
LICENSEE CONTACT FOR THIS LER (12)												TELEPHONE NUMBER									
NAME												AREA CODE									
L.P. Bregni, Compliance Engineer												3 1 3 5 8 6 - 5 3 1 3									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC												
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR							
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO											
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)																					

On September 27, 1985, at 1044 hours with the plant in Operational Condition 2 (4.5% power; 920 psig), the west turbine bypass valve went full closed while main turbine run-up testing was in progress. Closure of the bypass valve caused reactor pressure to increase and led to an RPS trip on high pressure. The maximum pressure reached was about 1068 psig. No safety relief valves or emergency core cooling systems were actuated, and all safety systems responded as designed. Investigation determined that at the gain setting used in testing, noise picked up by the turbine speed pickup was amplified and seen by the run-up module as part of the speed signal. The run-up module is used to control turbine speed from turning gear to synchronous speed. The gain adjustment of the run-up module was set at maximum for initial system testing. The noise was interpreted as a sudden increase in the speed pickup signal, causing a rapid control action in the bypass valve. This rapid movement caused a large valve position error signal to be generated which led to eventual closure of the bypass valve by the control system as designed. The turbine was next rolled on September 30, 1985. During this roll, the gain level on the run-up module was adjusted to a level at which noise did not interfere with the actual speed signal. The run-up module operated properly on additional run-ups on October 3 and 4.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Fermi-2	0 5 0 0 0 3 4 1	8 5	0 6 6	0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

On September 27, 1985, at 1044 hours with the plant in Operational Condition 2 (4.5% power; 920 psig), the west turbine bypass valve went full closed while main turbine run-up testing was in progress. The east turbine bypass valve was not in-service at the time for repairs on the east bypass line. Closure of the west turbine bypass valve caused reactor pressure to increase and led to an RPS trip on high pressure. The maximum pressure reached was about 1068 psig. No safety relief valves or emergency core cooling systems were actuated. All safety systems responded as designed.

Prior to this event, at 1034 hours, main turbine run-up procedures were initiated in accordance with DEMO.01A.571, "Turbine System Initial Operation". Reactor pressure was being controlled by positioning the west turbine bypass valve and turbine speed was to be controlled by positioning the turbine stop valves. All were under the automatic control functions of the turbine-generator. The west bypass valve was about 30 percent open.

At 1041 hours, the main turbine was rolling on steam. Within a few minutes and with actual turbine speed at 168 rpm, the run-up module saw an erroneous speed signal of about 300 rpm. The run-up module is used to control turbine speed from turning gear speed (about 25 rpm) to turbine synchronous speed (about 1800 rpm). The stop valves oscillated rapidly as the control system tried to adjust to the higher speed signal. The west bypass valve, unable to follow the rapid oscillations, to control reactor pressure, was tripped closed by the turbine-generator control system.

Closure of the bypass valve caused reactor pressure to increase, which increased reactor power. To reduce reactor power, the operator began inserting control rods and tripped the main turbine to permit opening the west turbine bypass valve. However, reactor pressure reached the high trip point about 4 seconds after the main turbine trip, causing an automatic reactor scram. The Control Room operators entered the Abnormal Operating Procedure (AOP) for reactor scram and quickly stabilized plant conditions. During the transient, the peak reactor pressure was 1068 psig.

Investigation by English Electric (the turbine manufacturer) personnel determined that at the gain setting used in the initial testing, noise picked up by the turbine speed pickup was amplified and seen by the run-up module as part of the speed signal. The gain adjustment of the run-up module was set at maximum for initial system testing.

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DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Fermi-2

0 5 0 0 0 3 4 1 8 5 - 0 6 6 - 0 0 0 3 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

The noise was interpreted as a sudden increase (168 to 300 rpm) in the speed pickup signal, causing the rapid control action of the bypass valve. This rapid movement caused a large valve position error signal to be generated which led to eventual closure of the bypass valve by the control system as designed.

The turbine was next rolled on September 30, 1985. During this roll, the gain level on the run-up module was adjusted to a level at which noise did not interfere with the actual speed signal. The run-up module operated properly on additional run-ups on October 3 and 4, 1985.

**Detroit
Edison**

Robert S. Lenart
Plant Manager

Fermi-2
6400 North Dixie Highway
Newport, Michigan 48166
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October 25, 1985
NP850171



Nuclear
Operations

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

Gentlemen:

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

Subject: Transmittal of Licensee
Event Report 85-066

Please find enclosed LER No. 85-066-00, dated October 25, 1985, for a reportable event which occurred on September 27, 1985. As indicated below, a copy of this LER is being sent to the Administrator Region III.

If you have any questions, please contact us.

Sincerely,

R. S. Lenart
Plant Manager

Enclosure: NRC Forms 366, 366A

cc: P.H. Byron
H.D. Lynch

Regional Administrator
USNRC Region III
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Glen Ellyn, IL 60137

Director/Coordinator
Monroe City-County Office of Civil Preparedness
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11