NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Fermi 2	0 5 0 0 0 3 4 1	1 OF 0 3

TITLE (4) RWCU Isolated when Operator Failed to Shut Down System on High Temperature Alarm

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 5 0 0 0
1 1	2 1	8 5	8 5	—	0 7 8	— 0 0	1 2	1 9	8 5		0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
4	20.402(b)	20.405(c)	XX 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 0 0	20.405(a)(1)(i)	50.36(a)(1)	50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	XX NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On November 21, 1985, the plant was in Operational Condition 4 (Cold Shutdown) for a maintenance and modification outage. The Reactor Water Cleanup (RWCU) system was started about 0510 hours, to decrease reactor water level to support maintenance activities. At 0625 hours, the "RWCU Filter Demineralizer Inlet Temperature High" alarm was received and the control room operator began reducing flow as described in the alarm response procedure. Because of system outages, the RWCU was being operated without a supply of cooling water to the RWCU nonregenerative heat exchangers, and the reduction in flow was not effective in reducing system temperatures. At 0652 hours, the RWCU system primary containment inboard isolation valve G33F001 closed as designed when the temperature at the outlet of the nonregenerative heat exchanger exceeded 140 degrees F. The cause of this event was failure to perform adequate monitoring of RWCU system parameters after startup. A memo was placed in Operation's required reading detailing the event, and reminding operators that increased monitoring of plant parameters is critical when systems are started up or operated in an abnormal line-up. Also, the operator involved in this event prepared and presented to all shifts a narrative of the event which details actions taken and how others can avoid this type of mistake.

IE22
1/1

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 1 7 8	— 0 0	0 2 OF 0 3

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

On November 21, 1985, the plant was in Operational Condition 4 (Cold Shutdown) for a maintenance and modification outage. About 0415 hours on November 21, operators began preparations to start up the Reactor Water Cleanup (RWCU) system. The system had been shut down for minor repairs and modifications during the plant outage, and was being started for the express purpose of decreasing reactor pressure vessel water level to support maintenance on check valves in the Reactor Feedwater system. Preparations for the start up included filling and venting system piping, and verifying the completion of prerequisites. During the verification of prerequisites, the operator noted that the manually operated valves in the piping that supplies cooling water to the two RWCU nonregenerative heat exchangers were closed.

The nonregenerative heat exchangers are located just upstream of the RWCU filter demineralizers and reduce the temperature of the water before it enters the demineralizers. The Reactor Building Closed Cooling Water (RBCCW) system supplies the cooling water to the RWCU nonregenerative heat exchangers. The manual valves had been closed because cooling water to all RBCCW system loads had been reduced to a minimum to compensate for the reduced cooling capacity of the system. The cooling capacity of the RBCCW system had been reduced because of a reduction in flow of cooling water from the General Service Water (GSW) system to allow cleaning of the Main Condenser waterboxes to proceed unimpeded.

The operator contacted the control room, and the Nuclear Shift Supervisor (NSS) was consulted regarding operating the RWCU system without cooling water. The NSS, his assistant, and the Shift Technical Advisor (STA) all concurred that the system could be run without cooling water since the temperature of the water in the Reactor Recirculation system loops was only about 90 degrees F. Suction to the RWCU pumps is taken from the Reactor Recirculation system loops. The temperature of the water in the recirculation loops was determined after flow through the RWCU system was established. Because of some turbulent mixing created by the RWCU flow, this temperature reading was expected to be indicative of bulk reactor water temperature. However, as the process continued, warmer water (about 150 degrees F) from the vessel eventually displaced the cooler water in the recirculation loops.

The RWCU system was started about 0510 hours, and placed in service in the blowdown mode; filter demineralizers bypassed and flow to the condenser. At 0625 hours, annunciator 2D118 "RWCU Filter Demineralizer Inlet Temperature High" was received in the control room. This alarm is received when the temperature at the inlet of the filter demineralizer exceeds 130 degrees F.

The control room operator began reducing flow as described in the alarm response procedure. Since no cooling water flow from the RBCCW was available, reducing the RWCU flow was not effective in reducing system temperatures. Although the reduction in flow did extend the time between receipt of the alarm and system isolation, it did not prevent the isolation.

At 0652 hours, the RWCU system primary containment inboard isolation valve G33F001 isolated as designed when the temperature at the outlet of the nonregenerative heat exchanger exceeded 140 degrees F. The RWCU pumps tripped off in response to G33F001 going closed, and the control room operator closed the outboard isolation valve G33F004. Closure of these primary containment isolation valves in this manner is reportable as an actuation of an Engineered Safety Feature system.

The cause of this event was failure to perform adequate monitoring of RWCU system parameters after start-up. Monitoring system temperatures was particularly critical since the RWCU was being operated without cooling water from the RBCCW system. Also, with the manual valves from the RBCCW system closed, the RWCU was being operated in an abnormal line-up condition which requires additional operator attention. Follow-up monitoring would probably have prevented this event.

Corrective action to prevent recurrence includes:

1. A memo was placed in Operation's required reading detailing the event, and reminding operators that increased monitoring of plant parameters is critical when systems are started up or operated in an abnormal line-up.

2. The operator involved in this event, prepared and presented to all shifts a narrative of the event which details actions taken and how others can avoid this type of mistake.

3. This LER will be placed in Operation's required reading.

The safety significance of this event is minimal. In response to the isolation signal, the RWCU system operated properly and without detriment to the equipment. The decision to run RWCU without cooling water was made because of the low reactor coolant temperature. This event would not have occurred if the plant had been operating.

Robert S. Lenart
Plant Manager

Detroit Edison

Fermi-2
6400 North Dixie Highway
Newport, Michigan 48166
(313) 586-5201

December 19, 1985
NP850274

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 85-078

Please find enclosed LER No. 85-078-00, dated December 19, 1985, for a reportable event which occurred on November 21, 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.M. Byron
M.D. Lynch

Regional Administrator
USNRC Region III
799 Roosevelt Rd.
Glen Ellyn, IL 60137

Director/Coordinator
Monroe City-County Office of Civil Preparedness
965 South Raisinville Road
Monroe, MI 48161

IE22
1/1