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)
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TITLE (4) Reactor Water Cleanup Steam Leak Detection System Isolates While Switching Battery Chargers

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 0	2 4	8 5	8 5	- 0 6 4	- 0 0	1 1	2 2	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)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	20.405(a)(1)(i)	50.36(a)(1)	50.73(a)(2)(v)	73.71(c)
0 0 0	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
L.P. Bregni, Compliance Engineer	AREA CODE 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)	X NO				

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

On October 24 1985, the plant was in Operational Condition 4 (Cold Shutdown) for a planned maintenance and modification outage. The Reactor Water Cleanup (RWCU) system was shut down. At 0641 hours that day, RWCU inboard primary containment isolation valve G33F001 went closed. The isolation was initiated by the RWCU Steam Leak Detection System (SLDS) on a high differential temperature condition in the area of the RWCU equipment room. The immediate actions taken were to verify full closure of isolation valve G33F001 and to verify that no actual system leakage existed. The spurious signal most likely was generated by switching the Division 1, 130 volt D.C. battery charger. What is suspected occurred is when the charges were switched the voltage in the Division I 130 volt D.C. system dipped momentarily. When the voltage recovered, the RWCU SLDS actuated. The Riley model 86TGF and 86VTFF temperature switches used in the RWCU SLDS are known to actuate to cause an isolation signal whenever they are energized. A design modification has been installed in the RWCU SLDS logic to prevent recurrence of RWCU isolations on spurious signals in the RWCU SLDS. The modification involves the addition of a time delay to the final output relay in the RWCU SLDS circuit.

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

On October 24 1985, the plant was in Operational Condition 4 (Cold Shutdown) for a planned maintenance and modification outage. The Reactor Water Cleanup (RWCU) system was shut down to support the routine performance of surveillance 24.707.01, "Reactor Water Cleanup Valve Operability Test". At 0641 hours that day, RWCU inboard primary containment isolation valve G33F001 went closed. The control room alarm indicated that the isolation was initiated by the RWCU Steam Leak Detection System (SLDS) on a high differential temperature condition in the area of the RWCU equipment room. The immediate actions taken therefore, were to verify full closure of isolation valve G33F001 and to verify that no actual system leakage existed. Following the isolation, the RWCU system remained shut down for maintenance.

An investigation was conducted to determine the cause of the spurious isolation signal in the RWCU Steam Leak Detection System. Although not conclusively proven, the spurious signal most likely was generated by switching the Division I, 130 volt D.C. battery charger. About the same time the Division I RWCU system isolation signal occurred, the Division I inservice battery charger 2A-2 was being switched for the available spare charger, 2A1-2. What is suspected occurred is when the charges were switched the voltage in the Division I 130 volt D.C. system dipped momentarily. When the voltage recovered, the RWCU SLDS actuated. The Riley model 86TGF and 86VTFF temperature switches used in the RWCU SLDS are known to actuate to cause an isolation signal whenever they are energized. This was discussed in LER 85-025, in which a RWCU isolation occurred when the fuses powering the temperature switches were installed energizing the system. How this voltage dip occurred in the October 24 event is not certain since the chargers are placed in parallel with the battery before the charger that is being removed from service is deenergized. Also, the battery should maintain system voltage during any short disruption in battery charging that may have occurred when the chargers were switched.

However, the sequence of events recorder output shows that an alarm was received indicating that battery charger 2A-2 had experienced an A.C. supply failure one second before the signal was received isolating the RWCU system. Also, several alarms were received indicating failures in other steam leak detection power supplies; all supplied by the same battery.

The battery charger switching operation was being conducted as part of surveillance procedure 42.309.04 "Battery Charger Load Test". Although this was the first time this surveillance procedure was performed, the battery charger switching operation has been conducted many times in the past in performance of other procedures, and has been conducted since the October 24 event. The October 24 event is the only known occurrence of the RWCU system isolating when the battery chargers were being switched.

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

A design modification has been installed in the RWCU SLDS logic to prevent recurrence of RWCU isolations on spurious signals in the RWCU SLDS. The modification involves the addition of a time delay to the final output relay in the RWCU SLDS circuit. Placing a time delay in this relay will slow the system response time enough to compensate for short lived transients and spurious signals without comprimising overall leak detection system effectiveness. This modification completes corrective action for LER 85-025-01, 85-027, 85-028, 85-031, and 85-050, in which spurious signals caused an RWCU isolation.

The safety consequences of this event are minimal. In response to the isolation signal, the RWCU system operated properly, without detriment to the equipment, and without affecting the safe operation of the plant.

Robert S. Lenart
Plant Manager

Detroit Edison

Fermi-2
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November 22, 1985
NP850225

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 85-064

Please find enclosed LER No. 85-064-00, dated November 22, 1985, for a reportable event which occurred on October 24, 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

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Glen Ellyn, IL 60137

Director/Coordinator
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