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Nuclear  
Operations

10CFR50.73

September 28, 1990  
NRC-90-0144

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

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

Subject: Licensee Event Report (LER) No. 90-007

Please find enclosed LER No. 90-007, dated September 28, 1990, for a reportable event that occurred on August 29, 1990. A copy of this LER is also being sent to the Regional Administrator, USNRC Region III.

If you have any questions, please contact Joseph Pendergast, Compliance Engineer, at (313) 586-1682.

Sincerely,

Enclosure: NRC Forms 366, 366A

cc: A. B. Davis  
J. R. Eckert  
R. W. DeFayette  
W. G. Rogers  
J. F. Stang

Wayne County Emergency  
Management Division

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Fermi 2	DOCKET NUMBER (2)  0 5 0 0 0 3 4 1	LER NUMBER (6)			PAGE (3)		
		YEAR  9 0	SEQUENTIAL NUMBER  0 0 7	REVISION NUMBER  0 0		0 2 OF	0 4

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

Initial Plant Conditions:

Operating Condition: 1 (Power Operation)  
Reactor Power: 99.7%  
Reactor Pressure 1008  
Reactor Temperature: s Fahrenheit

Description of the Event:

On August 29, 1990, the Division 2 Control Center Heating and Ventilation and Air Conditioning (CCHVAC) (VI) had been placed in recirculation mode for performance of surveillance 24.413.03, "Control Room Emergency Filter Monthly Operability Test." At 1257 hours, the CCHVAC Division 2 Control Center Radiation Monitor (MON) annunciators alarmed and the Control Room Division 2 CCHVAC damper (DMP) indications were lost. The Division 1 CCHVAC automatically shifted to the recirculation mode in response to the loss of power to the radiation monitor. Appropriate damper positions for Division 2 CCHVAC were determined by the dampers' local indications.

The initial investigation determined that in panel (PL) H21-P296B, fuse F9, which supplies 120VAC Balance of Plant (BOP) power to the CCHVAC radiation monitor trip relays (RLY) had opened. An attempt to replace the fuse was made twice with the fuse opening on both attempts. A seven day Limiting Condition of Operation, 90-404, was entered. Work Request 006D900829 was issued to troubleshoot the problem. The troubleshooting activity determined that a faulty indicating lamp for the Control Center Kitchen Exhaust Outboard Damper had caused the fuse to open. The lamp and fuse F9 were replaced. The LCO was cleared following the investigation and repair on August 30, at 1706 hours.

Cause of the Event:

The power for the Control Center Kitchen Exhaust Outboard Damper indicating lamp comes from a 120VAC non-safety (BOP) power supply. The power supply also feeds the Control Center Radiation Monitoring trip relays which interface with the isolation logic for CCHVAC. This interface is designed to initiate the recirculation mode of CCHVAC upon de-energization of the logic relays (RLY), which occurs upon a loss of power to the radiation monitor logic relays.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (if more space is required, use additional NRC Form 305A's) (17)

When the lamp shorted, the current exceeded the rating of the installed fuse and caused it to open. This de-energized the circuit and caused the shift of CCHVAC Division 1 to the recirculation mode. This is due to a design deficiency of the CCHVAC Radiation Monitor trip in that fuse F9 which supplies 120VAC power to the CCHVAC indicating lights also supplies the radiation monitor trip relays.

#### Analysis of the Event:

The purpose of the CCHVAC is to maintain the habitability of the control room envelope under any plant operating condition. The failure of fuse F9 and the Control Center Kitchen Exhaust Outboard indication lamp did not prevent the system from fulfilling its design function. Had protection for Control Room habitability been required, the existing operation of Division 2 in the recirculation mode or the subsequent operation of Division 1 CCHVAC in the recirculation mode would have provided the necessary protection. Therefore, this event did not adversely impact the health and safety of the public or plant personnel nor did it affect the safe operation of the plant.

#### Corrective Actions:

Engineering Design Package (EDP) 11115 will be implemented. This EDP was developed and in the scheduling stage when this event occurred. The design change will separate the 120 VAC power indicating lamp circuit from the CCHVAC radiation monitor trip relay circuit. The EDP will remove the CCHVAC radiation monitor trip relays from the downstream side of fuse F9 and connect them directly to the 120VAC BOP power distribution panel. This will eliminate the radiation monitor trip and resulting CCHVAC recirculation mode actuation upon a power loss due to a shorted indicating lamp. The EDP will also replace the present indication lamps with LED cluster type lamps. This EDP will be installed prior to return to service from the Second Refueling Outage.

#### Previous Similar Events:

There were two similar LER previously reported.



## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

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

In LER 88-017, the replacement of a burned out lamp caused the event. The corrective action was to replace the indicating lamp since it was found that the glass was not securely fastened to the base of the lamp. This allowed the filament wires to short together while turning the lamp during the process of replacing the lamp. The fuse opened and CCHVAC shifted to the recirculation mode.

In LER 89-026, the failure of a lamp filament when it was being tightened caused the event. This drew an excessive current which opened the fuse. A modification to the logic was evaluated for the feasibility of eliminating the interdependence between the logic and the position indication power supply for CCHVAC. This evaluation resulted in the initiation of EDP 11115.