

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Fermi 2 DOCKET NUMBER (2): 050003411 PAGE (3): 1 OF 05

TITLE (4): Control Center Heating Ventilating and Air Conditioning System Actuates to Recirculation Mode

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	02	8	7	8	7	0	5	1	3	8	8	N/A	0	5	0	0	0
0	9	02	8	7	8	7	0	5	1	3	8	8	N/A	0	5	0	0	0

OPERATING MODE (9): 4

POWER LEVEL (10): 0.00

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.38(a)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.38(a)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	<input type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 388A)
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(vi)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12):

NAME: Joseph Pendergast, Licensing Engineer TELEPHONE NUMBER: 313586-1682

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13):

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPPDS

SUPPLEMENTAL REPORT EXPECTED (14): YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15): MONTH DAY YEAR

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

On September 2, 1987 at 1442 hours, the Control Center Heating, Ventilating and Air Conditioning (CCHVAC) Division I shifted from normal operation to recirculation mode. Also, the Division I Standby Gas Treatment System (SGTS) automatically initiated. Immediately prior to these actuations, Channel "A" Fuel Pool Exhaust Ventilation Radiation Monitor received a downscale/inoperable trip alarm.

The plant engineering staff was able to recreate the CCHVAC and SGTS actuation by movement of the controls for the Fuel Pool Exhaust Ventilation Radiation Monitor indicator and trip unit. However, the exact cause of the original event could not be determined.

To prevent recurrence, required reading was issued. Informational engraved plates have been attached onto each of the Fuel Pool Radiation Exhaust Monitors A, B, C and D that states the following:

"Red pushbutton switch is for reset only. Inop trip cannot be inhibited."

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	OF	5
		87	043	02		

TEXT -- only space if required. Use additional NRC Form 3054 if (17)

Initial Plant Conditions:

Operational Condition: 4 (Cold Shutdown)
 Reactor Power: 0 Percent
 Reactor Pressure: 0 psig
 Reactor Temperature: 142 degrees Fahrenheit

Description of the Event:

On September 2, 1987 at 1442 hours, the Control Center Heating Ventilation and Air Conditioning (CCHVAC) (VI) Division I shifted from the normal mode of operation to the recirculation mode of operation. The Division I Standby Gas Treatment System (SGTS) (BH) automatically initiated, but the Division II SGTS did not automatically initiate. The Division I Channel A Fuel Pool Exhaust Ventilation Radiation Monitor (MON) received a downscale/inoperable alarm, caused by an inoperable trip signal which lasted 0.176 seconds. An inoperable trip signal on either Division I Channel A or B, or Division II Channel C or D causes the CCHVAC to shift to the recirculation mode and SGTS to initiate for the affected Division.

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Operations personnel investigated the condition of the radiation monitors and the area surrounding the detectors. There was no cause found for a CCHVAC/SGTS actuation signal at the time of the event. At 1452 hours the SGTS Division I was shutdown and CCHVAC returned to normal operation. This event is reportable since it resulted in an actuation of an engineered safety feature (ESF).

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The other indications reviewed by operations personnel at the time of the event were normal. A review of the chart recordings from the Division I Fuel Pool Exhaust Ventilation Radiation Monitors did not indicate an inoperable trip condition.

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FACILITY NAME (1) Fermi 2	DOCKET NUMBER (2) 0500034187	LER NUMBER (6)			PAGE (3)	
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					043	020

TEXT (if more space is required, use additional NRC Form 365A (1/17))

Cause of the Event:

An investigation of the work package documentation for the Reactor Building Heating Ventilation and Air Conditioning Engineering Design Package (EDP) 4232 being installed at the time of this event was conducted. All other related plant documents to the EDP such as Red Tag Record/ Abnormal Lineup Sheets, Control Room Surveillance Logs, Nuclear Supervising Operator Logs and Nuclear Shift Supervisor Logs also were reviewed. The investigation yielded no evidence that the installation of EDP 4232 could have caused the September 2, 1987 event.

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The plant engineering staff was able to recreate the event by movement of the controls for the Division I Fuel Pool Exhaust Ventilation Radiation Monitor indicator and trip unit. The performance of a Sequence of Events (SOE) test replicated those responses observed during the September 2, 1987 event. The SOE test data provides enough information to determine that the same event could have been caused by the movement of the function switch while the reset control switch was depressed. This configuration places the unit out of its normal mode of operation and provides automatic reset upon return of the controls to normal.

Analysis of the Event:

A SOE test was performed on November 13, 1987, between 1352 and 1440 hours. The SOE test was performed to replicate the CCHVAC and SGTS actuation. Three different scenarios of the event were created.

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The first scenario was accomplished by rapidly moving the function switch for the Channel A Fuel Pool Ventilation Radiation Monitor from the operate position to the zero position then rapidly returning to the operate position again. The reset switch was depressed during this scenario. The annunciator for Division I Channel A shifted to the inoperable alarm status for a 0.356 second period, CCHVAC shifted to the recirculation mode and SGTS initiated as expected. As the function switch returned to operate position, the alarm cleared. This was possible since the automatic reset permissive condition was provided by the depressed unit reset switch.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	

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

CCHVAC was left in the recirculation mode and SGTS remained operating during the performance of the following scenarios. The second scenario involved moving the switch from the operate position to the trip test position and back to the operate position again. The reset switch was held depressed. The second recreation of the event also produced an inoperable alarm condition for Division I Channel A which reset and lasted 0.237 seconds.

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Finally, a third scenario was run without the reset switch depressed. The function switch was moved from operate position to the zero position and back to operate position again. This produced an annunciator alarm condition for Division I Channel A, as well as an illuminated inoperable alarm at the unit. Until the unit's reset switch was depressed at the relay room panel, the response conditions were maintained and did not reset.

Based on the SOE test results, the plant engineering staff was able to recreate the CCHVAC and SGTS actuation by movement of the controls for the Fuel Pool Exhaust Ventilation Radiation Monitor indicator and trip unit. However, the exact cause of the original event could not be determined.

Neither the change in mode of the Division I of CCHVAC nor the actuation of the SGTS had detrimental effects on either system. The change in mode of the Division I of CCHVAC nor the actuation of SGTS did not result in reduced availability of any plant system.

If there had been an event requiring the control room habitability protection, Division I CCHVAC would have already been fulfilling this function. Therefore, the significance of this event would not have been greater under any other plant operating conditions.

Corrective Actions:

A SOE test was performed on November 13, 1987. The results of this SOE are described in the analysis section of this report. The results were as expected in that the actuation of an ESF took place. The Fuel Pool Exhaust Ventilation Radiation Monitor inoperable trip annunciator shifted to the alarm mode for a brief and comparable time period. The pen recorder at the alarm mode change did not record the shift due to the speed at which the recorder pen was moving.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		87	043	02	05	OF 05

TEXT (if more space is required, use additional NRC Form 366A) (17)

Required reading was issued on November 19, 1987 to operations and instrument and controls personnel. The required reading states the following: Fuel Pool Ventilation Exhaust Radiation Monitors D11-K609 A through D Indicator and Trip Units are located on panel H11-P606. The units have a small red pushbutton switch on each of their exterior control surfaces.

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The sole purpose of this switch is to manually reset the units upscale, or downscale internal trip relays and associated unit alarm lamps. The reset switch is used following a trip condition and whenever a permissive condition of normal radiation levels within the upscale and downscale trip levels exists. The reset will clear Control Room Annunciators 3D27 or 3D35.

Informational engraved plates have been attached to the Fuel Pool Radiation Exhaust Monitors A, B, C and D that state as follows:

"Red pushbutton switch is for reset only. Inop trip cannot be inhibited."

Previous Similar Events:

There have been eight previous events which resulted in the CCHVAC shifting to recirculation mode. Six of these were attributed to personnel error. One actuation is assumed to have been caused by a transient power condition. There was one actuation due to failure of a radiation monitor. This is the first time the actuation of the CCHVAC and SGTS was most probably caused by the movement of the controls for the Fuel Pool Exhaust Ventilation Radiation Monitor indicator and trip unit.

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10CFR50.73



Nuclear
Operations

May 13, 1988
NRC-88-0099

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

- References: (1) Fermi 2
NRC Docket No. 50-341
Facility Operating License No. NPF-43
- (2) Transmittal of Licensee Event Report
87-043-00, dated October 2, 1987,
NRC-87-0181
- (3) Transmittal of Licensee Event Report
87-043-01, dated November 3, 1987,
NRC-87-0195

Subject: Licensee Event Report (LER) No. 87-043-02

Please find enclosed LER No. 87-043-02, dated May 13, 1988, for a reportable event that occurred on September 2, 1987. This report is being revised to report the results of investigation of the event. A copy of this LER is also being sent to the Regional Administrator, USNRC Region III.

If you have any questions, please contact Patricia Anthony at (313) 586-1617.

Sincerely,

Enclosure: NRC Forms 366, 366A

cc: A. B. Davis
J. R. Eckert
R. C. Knop
T. R. Quay
W. G. Rogers

Wayne County Emergency
Management Division

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