

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
High Pressure Condition Caused By Personnel Error Results in Automatic Reactor Trip

| 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 | 8 | 29 | 8 | 6 | 8 | 6 | 0 | 3 | 1 | 0 | 0 | 0 | 9 | 2 | 5 | 8 | 6 | N/A | 0 | 5 | 0 | 0 | 0 |
| | | | | | | | | | N/A | | | 0 | | | 5 | 0 | 0 | 0 | | | | | |

OPERATING MODE (9) 2

POWER LEVEL (10) 0, 0, 4

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

| | | | | |
|-------------------|------------------|-------------------------------------|----------------------|--|
| 20.402(b) | 20.405(c) | <input checked="" type="checkbox"/> | 50.73(a)(2)(iv) | 73.71(b) |
| 20.405(a)(1)(i) | 50.36(c)(1) | <input type="checkbox"/> | 50.73(a)(2)(v) | 73.71(c) |
| 20.405(a)(1)(ii) | 50.36(c)(2) | <input type="checkbox"/> | 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) | <input type="checkbox"/> | 50.73(a)(2)(viii)(A) | |
| 20.405(a)(1)(iv) | 50.73(a)(2)(ii) | <input type="checkbox"/> | 50.73(a)(2)(viii)(B) | |
| 20.405(a)(1)(v) | 50.73(a)(2)(iii) | <input type="checkbox"/> | 50.73(a)(2)(ix) | |

LICENSEE CONTACT FOR THIS LER (12)

| | |
|--|------------------------------------|
| NAME Lewis P. Bregni, Compliance Engineer | TELEPHONE NUMBER |
| | 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 |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| | | | | | | | | | |
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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 space typewritten lines) (16)

At 1730 hours on August 29, 1986, a high reactor pressure condition at Fermi 2 resulted in automatic actuation of the Reactor Protection System (RPS) and a reactor trip. The plant had been operating at 3.6 percent reactor power, 960 psig, and 540 degrees Fahrenheit prior to the trip. Heat removal was being performed by the Steam Bypass System, and the main turbine was off-line.

The event was initiated when, following an inadvertant loss of condensate Heater Feed Pump flow, Steam Bypass System flow to the condenser was isolated. Isolation of steam bypass flow resulted in a high reactor pressure condition.

This event was caused by a personnel error which was contributed to by inadequate procedural clarity and communications. As corrective actions, shift briefings were held, simulator training will be held, and a memorandum was issued on this event. Also, the procedure for starting the Heater Feed Pumps has been clarified.

No failed systems or components contributed to this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| | | 8 6 | - 0 3 1 | - 0 0 | 0 2 | OF | 0 4 |

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

At 1730 hours on August 29, 1986, a high reactor pressure condition at Fermi 2 resulted in automatic actuation of the Reactor Protection System (RPS)(JC) and a reactor trip. At the time of the event, the plant was in OPERATIONAL CONDITION 2 (STARTUP), at 3.6 percent reactor power, 960 psig, and 540 degrees Fahrenheit. Heat removal was being performed by the Steam Bypass System (JI), and the main turbine (TA) was off-line.

Following an operator (non-licensed, utility) check-out of the center condensate Heater Feed Pump (HFP)(SD), at 1727 hours the center HFP was started in order to allow performance of scheduled preventative maintenance activities on the East HFP. The center HFP pump appeared to start properly and indicated a steady discharge pressure. At 1728 hours the East HFP was secured.

When the operator performed his check-out of the center HFP he was not told that the pump was being prepared to be placed in-service. As a result, the check-out only verified that the pump had an adequate lube oil and cooling water supply. Because the check-out did not verify the HFP valve line-up, and since the HFP discharge valves do not provide control room position indication, the control room was not aware that the center HFP discharge valve was not open.

In addition to the line-up for the center HFP valve being incorrectly perceived in the control room, control room indications of pump flow which indicated that the discharge valve was closed were not recognized. This resulted in the center HFP discharging only to the condenser (SG) through the minimum flow line without being detected.

With the East and West Heater Feed Pumps secured, and the discharge valve on the center HFP closed, there was no feedwater flow to the operating Reactor Feed Pump (RFP)(SJ). The loss of feedwater (SJ) flow was noticed in the control room at 1729 hours, when in response to the loss of flow from the Heater Feed Pumps, the North RFP tripped on low suction pressure.

After the RFP trip, it was necessary to lower reactor pressure so that feedwater flow could be maintained via an HFP. However, an operator (licensed, utility) misinterpreted the statement made by the Assistant Shift Supervisor (licensed, utility) on the need to lower reactor pressure.

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Instead of acting to lower reactor pressure, the operator believed that he had been instructed to reduce steam flow through the Steam Bypass System. As a result, the operator mistakenly lowered the reactor steam flow limiter setting to approximately 3 percent. Reducing the flow limiter setpoint caused the steam bypass valves to close, which caused reactor pressure to increase.

Concurrent with reducing the flow limiter setting, and following the RFP trip, a low reactor water level alarm (Level 4) was received in the control room. In response, Standby Feedwater Pump "A" was started to reinitiate feedwater flow and recover reactor water level.

Immediately following receipt of the alarm on high reactor pressure, an automatic actuation of the RPS and a subsequent reactor trip were received on high reactor pressure at 1730 hours. The low reactor water level condition cleared immediately prior to the trip.

At 1736 hours, the Reactor Water Cleanup System (RWCU) (CE) pump tripped because of the cooldown induced depressurization transient which followed the reactor trip. Following the pump trip, the RWCU system was manually shutdown. Tripping of the RWCU pump and RWCU system shutdown is anticipated, and expected following a reactor trip.

In order to control the cooldown rate following the reactor trip, between 1744 hours and 1823 hours steam flow to the steam jet air ejectors (SH), manifold drains (SN), and gland seals (TC) was secured. Also, the main turbine bypass valves, and the inboard Main Steam Isolation Valves (MSIVs) (SB) were closed.

Following shutdown of the RWCU system, the inboard RWCU isolation valve tripped on thermal overload prior to full closure. Later, the overload device was reset and the valve was closed without further difficulty. The outboard RWCU isolation valve fully closed on the isolation signal as required.

This event was the result of a cognitive personnel error by the control room operator (licensed, utility) who mistakenly closed the Steam Bypass System valves. Although it could not have singularly caused the reactor trip, the event was contributed to, and initiated when personnel did not recognize that the center HFP was isolated and could not provide flow.

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The event was also contributed to by inadequate procedural clarity in the procedure for starting the HFP, and inadequate communications between the control room, the field, and between control room operators. Operation of the Heater Feed Pumps is covered in an approved procedure. This event was not directly contributed to by an error in an approved procedure or an activity which is not covered by an approved procedure. This event did not involve any failed or inoperable structures, components, or systems.

As corrective actions, "Lessons Learned" briefings were held, and simulator training will be held with each operations shift related to this event. Also, a memorandum addressing the inadequate communications and procedures related to the event was issued to licensed operations personnel, and the procedure for starting the Heater Feed Pumps has been revised to provide clarification of the HFP starting sequence. The procedural clarification will minimize the potential for future operator error when placing an HFP in service.

Since the Standby Feedwater System was available to provide feedwater flow following the loss of flow from the Heater Feed Pumps, this event did not affect the safe operation of the plant or the safety of the public. However, even if the Standby Feedwater System had not been available, depressurization and cooldown of the plant could have been accomplished through use of the Reactor Core Isolation Cooling System (BN) or the High Pressure Coolant Injection System (BJ).

No previous events involving a reactor trip caused by the loss of the Heater Feed Pumps have been reported for Fermi 2.

Detroit
Edison

Robert S. Lenart
Plant Manager

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

September 25, 1986
NP860525



Nuclear
Operations

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

Gentlemen:

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

Subject: Transmittal of Licensee
Event Report 86-031-00

Please find enclosed LER No. 86-031-00, dated September 25, 1986, for a reportable event that occurred on August 29, 1986. 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: M. D. Lynch
W. G. Rogers

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

Wayne County Emergency
Management Division
1250 Middlebelt Road
Detroit, MI 48242

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

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