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DTE Energy



10CFR50.73

August 29, 2003
NRC-03-0068

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

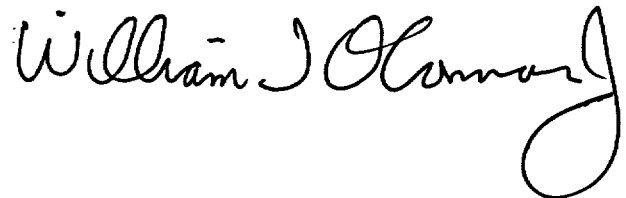
Subject: Licensee Event Report (LER) No. 03-001

Pursuant to 10 CFR 50.73(a)(2)(v)(D), Detroit Edison is submitting the enclosed LER No. 03-001. This LER documents the loss of the High Pressure Coolant Injection safety function due to closure of a steam supply valve.

No commitments are being made in this LER.

Should you have any questions or require additional information, please contact Mr. Norman K. Peterson of my staff at (734) 586-4258.

Sincerely,



cc: H. K. Chernoff
M. A. Ring
M. V. Yudas, Jr.
NRC Resident Office
Region III
Regional Administrator, Region III
Wayne County Emergency Management Division

IE22

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 Eb), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Fermi 2				2. DOCKET NUMBER 05000341				3. PAGE 1 OF 4			
4. TITLE Loss of High Pressure Coolant Injection Safety Function Due to Closure of Steam Supply Valve											
5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED		
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER	
07	13	2003	2003	- 001	- 00	08	29	2003	FACILITY NAME	DOCKET NUMBER	
									05000		
									05000		
9. OPERATING MODE		1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)							
10. POWER LEVEL		100		20.2201(b)		20.2203(a)(3)(II)		50.73(a)(2)(II)(B)		50.73(a)(2)(IX)(A)	
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(III)		50.73(a)(2)(X)	
				20.2203(a)(1)		50.36(c)(1)(I)(A)		50.73(a)(2)(IV)(A)		73.71(a)(4)	
				20.2203(a)(2)(I)		50.36(c)(1)(II)(A)		50.73(a)(2)(V)(A)		73.71(a)(5)	
				20.2203(a)(2)(II)		50.36(c)(2)		50.73(a)(2)(V)(B)		OTHER	
				20.2203(a)(2)(III)		50.46(a)(3)(II)		50.73(a)(2)(V)(C)		Specify in Abstract below or in NRC Form 366A	
				20.2203(a)(2)(IV)		50.73(a)(2)(I)(A)		x 50.73(a)(2)(V)(D)			
				20.2203(a)(2)(V)		50.73(a)(2)(I)(B)		50.73(a)(2)(VII)			
				20.2203(a)(2)(VI)		50.73(a)(2)(I)(C)		50.73(a)(2)(VIII)(A)			
				20.2203(a)(3)(I)		50.73(a)(2)(II)(A)		50.73(a)(2)(VIII)(B)			
12. LICENSEE CONTACT FOR THIS LER											
NAME Jerome Flint - Principal Technical Specialist						TELEPHONE NUMBER (Include Area Code) (734) 586-5212					
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT											
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX		
X	BJ	ISV	G182	Yes							
14. SUPPLEMENTAL REPORT EXPECTED										15. EXPECTED SUBMISSION DATE	
YES (If yes, complete EXPECTED SUBMISSION DATE).					X	NO		MONTH	DAY	YEAR	
16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)											
<p>On July 13, 2003, at 2200 hours, during surveillance testing of the High Pressure Coolant Injection (HPCI) system, valve E4150-F003, the Outboard Steam Supply Isolation Valve, failed to close when the close pushbutton was depressed. E4150-F003 is a normally closed valve and had just been successfully stroked open. In accordance with Technical Specification (TS) 3.6.1.3, Primary Containment Isolation Valves (PCIVs), the E4150-F003 valve was declared inoperable and the penetration flow path was isolated by closing and deactivating E4150-F002, the Inboard Steam Supply Isolation Valve. Isolating the HPCI steam supply rendered HPCI inoperable and TS 3.5.1, Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) System, was entered. All other ECCS systems remained operable.</p> <p>The event was caused by an electrical contact failure. The normally open auxiliary electrical contact that provides the seal in feature for closing the E4150-F003 valve failed to close when the close pushbutton was depressed. Without the seal in feature the E4150-F003 valve stopped stroking closed when the operator released the close pushbutton.</p> <p>The auxiliary electrical contact that provides the seal in feature for closing the E4150-F003 valve was replaced during the scheduled system maintenance outage. Post maintenance testing was completed and the HPCI system was declared operable on July 18, 2003, at 2107 hours.</p>											

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Initial Plant Conditions:

Mode 1
Reactor Power 100 percent

Description of the Event

On July 13, 2003, at 2200 hours, during surveillance testing of the High Pressure Coolant Injection (HPCI)(BJ) system, valve E4150-F003, the Outboard Steam Supply Isolation Valve (ISV), failed to close when the close pushbutton was depressed. E4150-F003 is a normally closed valve and had just been successfully stroked open. In accordance with Technical Specification (TS) 3.6.1.3, Primary Containment Isolation Valves (PCIVs), E4150-F003 was declared inoperable and the penetration flow path was isolated by closing and deactivating E4150-F002, the Inboard Steam Supply Isolation Valve. Isolating the HPCI steam supply rendered HPCI inoperable and TS 3.5.1, Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC)(BN) System, was entered. All other ECCS systems remained operable. On July 14, 2003, at 0157 hours, the NRC was notified (Event Number 39994) per 10CFR50.72(b)(3)(v)(D) for an event or condition that at the time of discovery could have prevented the fulfillment of the safety function of a system that is needed to mitigate the consequences of an accident.

This event is being reported in accordance with 10CFR50.73(a)(2)(v)(D) as an event or condition that could have prevented the fulfillment of the safety function of a system that is needed to mitigate the consequences of an accident.

Cause of the Event

Isolation of the HPCI steam line penetration is the cause of this event. The cause of the E4150-F003 valve failure to close was a faulty electrical contact. The normally open auxiliary electrical contact that provides the seal in feature for closing the E4150-F003 valve, failed to close (contact closed but no electrical continuity through the contact) when the close pushbutton was depressed. The seal in auxiliary contact maintains the valve's closed circuit energized after the close pushbutton is momentarily depressed and released. Without the seal in feature the E4150-F003 valve stopped stroking closed when the operator released the close pushbutton. HPCI was not considered inoperable as a result of the contact failure since the valve was capable of stroking open. Operations personnel declared the E4150-F003 valve inoperable and took the actions required by TS 3.6.1.3, Primary Containment Isolation Valves, to isolate the penetration rendering the HPCI system inoperable.

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Analysis of the Event

This event is reportable per 10CFR50.73(a)(2)(v)(D), an event or condition that could have prevented the fulfillment of the safety function of a system that is needed to mitigate the consequences of an accident. The HPCI system, a single train safety system, was rendered inoperable.

The purpose of the HPCI system is to provide emergency core cooling in the event of an accident involving loss of coolant from a relatively small break. Reactor steam is used to drive a turbine, which in turn drives a main and booster pump to provide a source of high pressure water to the reactor. The Reactor Core Isolation Cooling system (600 gallons per minute) and Standby Feedwater system (1300 gallons per minute) remained available for high pressure injection. Additionally, the Automatic Depressurization system was available to reduce reactor pressure to within the capabilities of low pressure Emergency Core Cooling Systems.

In accordance with the Maintenance Rule, the HPCI system is considered a risk significant system. This event occurred approximately three hours prior to a planned HPCI system maintenance outage. Including the additional three hours of system unavailability, this HPCI system outage was evaluated by the risk assessment group as having a low risk based upon a small increase in core damage probability, to 9.8E-8 with HPCI out of service, compared to 4.3E-8 for a similar period of time with no plant equipment in maintenance. Therefore, the health and safety of the public were not adversely affected by this event.

Corrective Actions

This was a failure of the auxiliary electrical contact (contact closed without providing continuity). During initial troubleshooting activities the main electrical contactor (CNTR) for valve closure was observed to energize when the close pushbutton was depressed, but failed to remain energized when the close pushbutton was released. During subsequent valve strokes the seal in circuit operated properly.

Maintenance personnel replaced the auxiliary electrical contact assembly that provides the seal in feature for closing the E4150-F003 valve. Post maintenance testing included stroking the valve to ensure proper operation of the seal in contact. The HPCI system maintenance outage was completed and HPCI declared operable on July 18, 2003, at 2107 hours.

The electrical contact assembly was quarantined upon removal and an off-site failure analysis will be performed.

This event was documented in the Fermi 2 corrective action program. The above actions and any further actions relating to this event will be developed and implemented commensurate with the established processes of the Fermi 2 corrective action program.

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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Additional Information

No systems other than those already mentioned in this report were affected by this event.

A. Failed Components:

Component: Contact Block
Description: DC Electrical Auxiliary Contact Assembly for Motor Control Center
Manufacturer: ITE-Gould Corporation
Model Number: F10NOCR

B. Previous LERs on Similar Problems:

There were no HPCI failures or similar events in the last two years.