

Douglas R. Gipson  
Senior Vice President, Nuclear Generation

Fermi 2  
6400 North Dixie Hwy., Newport, Michigan 48166  
Tel: 313.586.5201 Fax: 313.586.4172

**Detroit Edison**



10CFR50.73

December 13, 1999  
NRC-99-0111

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

References: 1) Fermi 2  
NRC Docket No. 50-341  
NRC License No. NPF-43

Subject: Licensee Event Report (LER) No. 99-008

Pursuant to 10 CFR 50.73(a)(2)(i)(B), Detroit Edison is submitting the enclosed LER No. 99-008. The LER documents the Mechanical Draft Cooling Tower "C" fan brake nitrogen supply isolation that occurred on October 28, 1999.

No new 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,

A handwritten signature in black ink, appearing to read "D. R. Gipson".

cc: J. Dyer  
A. J. Kugler  
A. Vogel  
M. V. Yudas, Jr.  
NRC Resident Office  
Region III  
Wayne County Emergency Management Division

JE22

**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 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an 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.

<b>FACILITY NAME (1)</b> Fermi 2	<b>DOCKET NUMBER (2)</b> 05000341	<b>PAGE (3)</b> 1 of 4
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**TITLE (4)**  
Mechanical Draft Cooling Tower "C" Fan Brake Nitrogen Supply Isolated

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 NAME	DOCKET NUMBER
11	11	99	99	--0 0 8--	00	12	13	99	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

<b>OPERATING MODE (9)</b> 1	<b>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)</b>									
	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)			
<b>POWER LEVEL (10)</b> 97	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)			
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71			
	20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER			
	20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A			
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)					

**LICENSEE CONTACT FOR THIS LER (12)**

<b>NAME</b> Joseph M. Pendergast - Principal Engineer, Compliance	<b>TELEPHONE NUMBER (Include Area Code)</b> (734) 586-1682
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**COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

**SUPPLEMENTAL REPORT EXPECTED (14)**

<b>YES</b> (If yes, complete EXPECTED SUBMISSION DATE).	X	<b>NO</b>	<b>EXPECTED SUBMISSION DATE (15)</b>	<b>MONTH</b>	<b>DAY</b>	<b>YEAR</b>

**ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)**

October 28, 1999, the Ultimate Heat Sink Mechanical Draft Cooling Tower (MDCT) "C" overspeed fan brake nitrogen supply cylinder and pressure regulator were replaced. On November 11, 1999, Instrumentation & Control (I&C) personnel performing a pressure regulator setpoint change and gauge replacement discovered that the regulator outlet manual isolation valve had been closed since the regulator was replaced. The MDCT "C" fan brake was considered to be inoperable from October 28, 1999, 0806 hours until November 11, 1999, 1726 hours when the regulator outlet valve was reopened. This event is being reported under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

Investigation determined that plant personnel did not recognize that the outlet valve was closed when the regulator was replaced. Procedures, valve line ups, drawings, and post maintenance testing requirements were insufficient to ensure correct alignment of all valves in the nitrogen supply to the fan brake system. A work package for a subsequent pressure regulator replacement incorporated instructions to ensure that fan brake nitrogen supply valves would be correctly aligned. Further corrective actions relating to this event are being considered for implementation commensurate with established priorities and processes of the Fermi 2 corrective action program.

**LICENSEE EVENT REPORT (LER)**  
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

Initial Plant Conditions:

Mode 1 (Power Operation)  
 Reactor Power 97 Percent  
 Reactor Pressure 1027 psig  
 Reactor Temperature 540 Degrees Fahrenheit

Description of the Event:

On October 28, 1999, the Ultimate Heat Sink [BS](UHS) Mechanical Draft Cooling Tower [CTW] (MDCT) "C" overspeed fan brake [BRK] nitrogen supply cylinder was replaced by maintenance personnel [Utility Non Licensed]. Post Maintenance Testing (PMT) following the replacement of the nitrogen supply cylinder showed a small leak on the outlet of the cylinder's pressure regulator [RG]. The regulator was replaced with a like for like part. Post Maintenance Testing verified proper regulator pressures and no nitrogen leaks. Operations personnel [Utility Non Licensed and Licensed] verified that the nitrogen cylinder isolation valves were open, and that regulator outlet pressures were within values specified by procedure.

On November 11, 1999, Instrumentation & Control (I&C) personnel [Utility Non Licensed], performing a pressure regulator gauge [PI] replacement and setpoint change determined the E11F422C regulator's outlet manual isolation valve was closed. I&C personnel notified the control room staff [Utility Licensed], and initiated Condition Assessment and Resolution Document (CARD) 99-18349. Operations personnel verified that the nitrogen supplies were properly aligned for the three other MDCT fan brake systems and re-aligned the C supply.

The nitrogen system for MDCT "C" fan brake was inoperable from October 28, 1999, 0806 hours until November 11, 1999, 1726 hours. The MDCT fan brakes are provided to prevent potentially damaging overspeed during a design basis tornado. As such, when there is a credible threat of a tornado, operability of the fan brakes is necessary for the associated MDCT fan to be considered operable. When there is no credible threat of a tornado, the fan brakes are not required for the associated MDCT fan to be considered operable. Technical Specification (TS) 3.7.2, "Emergency Equipment Cooling Water/Emergency Equipment Service Water (EESW) and Ultimate Heat Sink," requires two UHS each with two MDCT fans operable during plant operation. With one UHS inoperable TS 3.7.2 permits plant operation to continue for 72 hours before plant shutdown is required. Since there was no credible threat of a tornado while the MDCT "C" fan brake was inoperable, the associated UHS could be considered to have been operable during this event. However, because Detroit Edison was unaware of the status of the fan brake for the duration of this event, Detroit Edison considers that the affected UHS was inoperable from the standpoint of determining reportability, in this case. Since the affected UHS is considered to have been inoperable for more than 72 hours, this event is being reported under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by the plant's Technical Specifications.

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Cause of the Event:

The fan brake system nitrogen supply pressure regulator is received from the manufacturer with two valves, a cover over the inlet fitting, and the outlet valve closed. The cause of this event was that plant personnel performing the replacement did not recognize that the regulator outlet valve was closed. Although this regulator has been successfully replaced in the past, plant administrative controls in place were not sufficient to ensure that all valves in the fan brake nitrogen supply are correctly aligned. The regulator outlet valve, which is an integral part of the regulator, is not clearly identified on any design drawing or included in any procedure valve line up. The PMT and restoration valve line-up consisted of verification that available pressure indications were within specified ranges and that the nitrogen cylinder outlet valves were open. All of the available pressure indications were within the specified ranges and the cylinder outlet valves were verified open by maintenance and operations personnel. However, the available indications measure pressure at locations which may not indicate closure of the regulator outlet valve. The regulator pressure gauge is located upstream of the valve and would indicate the pressure supplied by the regulator independent of the outlet valve position. The downstream pressure gauge is pressurized by the downstream low pressure cylinders and would indicate pressure with the regulator outlet valve closed.

Analysis of the Event:

Technical Specification 3.7.2 requires the UHS reservoir to be operable in Modes 1, 2 and 3. The UHS reservoir is divided into two one-half capacity reservoirs. A two cell induced draft cooling tower is located above each half capacity reservoir. Each cell is equipped with one cooling MDCT fan. Two MDCT fans above each half capacity UHS reservoir are required for it to be considered operable. The MDCT fans have a brake system to prevent over speed from a design basis tornado as described in the Updated Final Safety Analysis Report (UFSAR) section 9.2.5.2.2, and are required for MDCT fan operability when there is a credible threat of a tornado. There was no credible threat while the fan brakes for MDCT "C" were inoperable, and as a result, the UHS safety function was preserved. In addition, the other three MDCT fans were operable during this period. Therefore, this event had no impact on the health and safety of the public.

Corrective Actions:

The valve was opened terminating the event on November 11, 1999, at 1726 hours. A work package for a subsequent pressure regulator replacement on November 30, 1999 incorporated instructions to ensure that the fan brake nitrogen supply valves were correctly aligned.

This event was documented in the Fermi 2 corrective action program. Further corrective actions are being considered which may include adding plant identification numbers to the nitrogen system and regulator outlet valves, revising piping and instrumentation diagrams; development of a maintenance procedure; and revision of the system operating procedure. These and any further corrective actions relating to this event will be developed and implemented commensurate with established priorities and processes of the Fermi 2 corrective action program.

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

Additional Information:

**A. Previous Similar Events**

License Event Report 89-016 describes a problem with low nitrogen pressure to the fan brakes for different reasons.