William S. Orser
Vice President
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Detroit Edison

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10CFR50.73

November 14, 1989
NRC-89-0194

Nuclear Generation

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

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

Subject: Licensee Event Report (LER) No. 89-027-00

Please find enclosed LER No. 89-027-00, dated November 14, 1989, for a reportable event that occurred on October 15, 1989. 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 at (313) 586-1682.

Sincerely,

Enclosure: NRC Forms 366, 366A

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

Wayne County Emergency
Management Division

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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

TITLE (4) Engineered Safety Feature Actuations Occurred During the Meggering of Reactor Protection Circuits

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)
									N/A	0 5 0 0 0
1 0	1 5	8 9	8 9	— 0 2 7	— 0 0	1 1	1 4	8 9	N/A	0 5 0 0 0

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	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)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Joseph Pendergast, Licensing Engineer	AREA CODE 3 1 3 5 8 6 - 1 6 8 2

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	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

At 1430 hours, on October 15, 1989, an electrician attempted to loosen a wire in a Reactor Protection System Panel (RPS) H11-P623. The Reactor Building/Heating Ventilation and Air Conditioning (HVAC), Control Center HVAC, and Drywell Floor and Equipment Drain Sumps isolated, the Standby Gas Treatment System, and Non-Interruptable Control Air Compressors started in response to the loosened wire. The wire was immediately re-tightened. Work was stopped and an investigation into the RPS actuation was initiated. All of the equipment was returned to normal operation at 1459 hours.

The work package did not contain adequate information to perform the job. The schematic print contained in the work package, did not show that the wire lifted was used as a neutral source for the actuation circuits for the systems noted above. However, the schematic did have the appropriate print referenced on it.

A critique of this event will be included in the Operations, Maintenance and Instrument & Controls required reading programs. The lessons learned will be incorporated into the initial training programs for electricians and instrumentation and control technicians. The expected completion date of these corrective actions is November 30, 1989.

Initial Plant Conditions:

Operational Condition: 5 (Defueled)
Reactor Power: 0 Percent
Reactor Temperature: 80 degrees Fahrenheit
Reactor Pressure: 0 psig

Description of Event:

On October 15, 1989, two electricians were assigned to megger cable (CBL) 236067-2C for the Reactor Recirculation Pump Seal Outboard Isolation Valve (ISV) B31-F016A and cable (CBL) 236068-2C for the Reactor Recirculation Pump Seal Outboard Isolation Valve (ISV) B31-F016B. They reviewed schematic prints contained in the work package. The review of the prints alerted the electricians to the fact that the cables were terminated in Relay Room Panel (PL) H11-P623. This is a panel which contains Reactor Protection System (RPS) (JC) circuits.

As with all work of this type, the electricians reported to the Research Tagging Center (RTC) to review the Red Tag Record. The review was completed, and showed the proper fuse (FU) was red tagged. The electricians signed on the Red Tag Record. It was then handed over to RTC licensed operator (NSO) who reviewed the Red Tag Record. Red Tags were confirmed properly hung. However, the NSO reviewing the Red Tag Record did not pay special attention to the fact that the meggering would take place in Relay Room Panel H11-P623. This panel is normally locked because of its' RPS circuits.

An electrician went to the Relay Room key cabinet (CAB), located in the RTC, to sign out the key for Panel H11-P623. The key cabinet was locked and when the electrician turned around to ask the RTC NSO for the key cabinet key, the NSO was gone. The electrician noted the key cabinet key on the NSO's desk and used it to sign out the key for Panel H11-P623.

The electricians then went to Panel H11-P623 in the Relay Room to perform the work. The electricians verified terminal points AA-59, CC-55, CC-56, CC-57 and CC-54 for B31-F016A were de-energized. The electricians started to megger from ground to terminal CC-56 and when a "0" reading was obtained, they realized that the neutral side is always grounded and the wire would have to be lifted in order to complete the megger. After reviewing the schematic prints they decided to determinate the neutral wire at point AA-59.

At 1430 hours, as one of the electricians loosened the wire at AA-59, a slight arc occurred and the actuation of relays were heard by the electricians. The Reactor Building/Heating Ventilation and Air Conditioning (HVAC) (VA), Control Center HVAC (VI), and Drywell Floor and Equipment Drain Sumps (DRN) had isolated; in addition, the Standby Gas Treatment System (SGTS) (BH), and Non-Interruptable Control Air (NAIS) (LE) Compressors had started in response to the loosened wire. The wire was immediately re-tightened. Work was stopped and an investigation into the RPS actuation was initiated. All of the equipment was returned to normal operation at 1459 hours.

Cause of Event:

Three personnel error related causes can be attributed to this event.

The work package did not contain adequate information to perform the job as required by procedure. The schematic print contained in the work package, did not show that the wire lifted at AA-59 was used as a neutral source for the loads which actuated/isolated. However, the schematic print did reference the appropriate schematic prints.

The RTC NSO (Utility Licensed) did not pay attention to detail when reviewing the work to be performed. Therefore, he did not question the electricians as to where the work was to be done. Had he done this, the Control Room would have been informed of the work in the Panel H11-P623 and a more thorough review would have been initiated.

The key for Relay Room Panel H11-P623 was obtained without the knowledge of RTC NSO by the electricians (Utility Non-Licensed), which is not the understood policy and common key control practices. The RTC NSO should have been verbally informed by the electricians before they obtained the key as to the specific key and panel they were planning on working in.

Analysis of the Event:

The isolation of CCHVAC and RBHVAC from normal mode to the recirculation mode is a conservative event. The actuation of SGTS is also a conservative event. Additionally the isolation of the Drywell sumps is a conservative event. The NIAS is not an Engineered Safety System. The compressors are designed to start as they did when the wire was loosened putting the system in its conservative mode of operation. These actuations and isolations do not decrease the ability of the systems to perform their safety

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

design functions during accident conditions. Thus, this event had no impact on plant safety or public health and safety.

Corrective Actions:

A night order was issued to operations personnel. It stated that whenever RTC personnel release keys to work groups for relay room panels they are to ensure the Nuclear Shift Supervisor is informed prior to the start of work. In addition more stringent control has been initiated for the RTC key cabinet. The lock has been changed and new keys have been issued to licensed operators with their company identification numbers stamped on the key.

A critique of this event will be included in the Operations, Maintenance and Instrument & Controls required reading program. It will ensure personnel have a thorough understanding of this event, and alert personnel to the limitations of schematic drawings. The Lessons Learned will be incorporated into the Instrumentation and Controls and the Electrical initial training program. The expected completion date for these corrective actions is November 30, 1989.

Previous Similar Events:

Licensee Event Reports 89-022, "Reactor Protection System Actuations and Reactor Building Heating Ventilation and Air Conditioning Isolation Which Occurred During the Installation of EDP 10127" and 88-015, "Division 1 Isolations Experienced During Implementation of a Design Change" were similar events in that work preparation was a similar cause.

Additionally, there are similarities to Licensee Event Report 89-012 since it also involved inadequate review of the same series of prints for the other division of this system. In that instance, the inadequate review of the prints resulted in an inadequate change to a procedure.