William S. Orser
Executive Vice President
Nuclear Generation

Detroit Edison

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

Nuclear Operations

10CFR50.73

February 18, 1993
NRC-93-0022

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. 93-003

Please find enclosed LER No. 93-003, dated February 18, 1993, for a reportable event that occurred on January 19, 1993. A copy of this LER is also being sent to the Regional Administrator, USNRC Region III.

If you have any questions, please contact John A. Tibai, Supervisor, Compliance and Special Projects, at (313) 586-4289.

Sincerely,

Enclosure: NRC Forms 366, 366A

cc: T. G. Colburn
A. B. Davis
W. J. Kropp
M. P. Phillips
P. L. Torpey

Wayne County Emergency
Management Division

220095

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 7

TITLE (4)
Technical Specification Required Recorder Discovered Not To Be Qualified

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 5 0 0 0
0 1	1 9	9 3	9 3	—	0 0 3	—	0 0	0 2	1 8	9 3		0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10): 8 5	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)	X 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
	AREA CODE
John A. Tibai, Supervisor, Compliance and Special Projects	3 1 3 5 8 6 - 4 2 8 9

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)

On January 6, 1993, while performing modifications on the plant simulator, technicians encountered problems during the installation of pressure recorder T50-R802B, "Division 2 Drywell and Torus Pressure." The technicians determined that the recorder did not meet the purchase order description for simulator application. Subsequent investigation found that the recorder intended for the simulator had been installed in the main control room. Installation of the simulator recorder in the main control room occurred on September 25, 1992 during the third refuel outage.

An engineering analysis concluded that although the simulator recorder installed in the main control room met most of the specifications for this application, it could not be seismically qualified through analytical methods. Thus, on January 19, 1993, it was concluded that the recorder could not be considered OPERABLE per Technical Specification section 3.3.7.5 when the plant entered MODE 2 (Startup) following the third refuel outage on November 4, 1992.

The simulator recorder installed in the main control room was replaced with the proper recorder on January 7, 1993. An investigation concluded that the cause of this event was a procedural deficiency. Inattention to detail by those involved was cited as a contributing factor. Procedure changes will be implemented. Lessons learned will be discussed in Technical Staff and Managers Training and in training sessions for those directly involved.

Initial Plant Conditions:

Operational Condition: 1 (Power Operation)
Reactor Power: 85 Percent
Reactor Pressure: 1014 psig
Reactor Temperature: 530 degrees Fahrenheit

Description of Event:

On January 6, 1993, while performing modifications on the plant simulator, technicians encountered problems during the installation of pressure recorder [PR] T50-R802B, "Division 2 Drywell and Torus Pressure." The technicians determined that the recorder did not meet the purchase order description for simulator application. Subsequent investigation found that the recorder intended for the simulator had been installed in the main control room [NA] while implementing Engineering Design Package (EDP) 11264 on September 25, 1992 during the third refuel outage. The recorder intended for the simulator was removed from the main control room and a proper recorder was installed on January 7, 1993. It was also found that the installed main control room Division 1 recorder had an internal label identifying it as the Division 2 recorder. Engineering documents have been changed to reflect the correct serial numbers for both recorders and new nameplates were ordered. Independent investigations and a Human Performance Enhancement System (HPES) review were conducted to determine the cause of this event.

Two non-qualified recorders for the simulator and two qualified recorders for the main control room, were ordered from Westronics in 1990. A purchase order was issued for the two simulator recorders in August, 1990 and a separate purchase order was issued for the two main control room recorders in September, 1990. The two non-qualified recorders were received in October, 1990 and were stored in the warehouse with the other materials purchased for EDP 11264. The qualified recorders were received in May, 1991 and stored likewise.

The cartons for the non-qualified recorders were to be marked "Simulator." They were not so marked because the required information was not effectively communicated to the vendor and to those who performed the inspection. The cartons, however, were labeled with the purchase order number and the EDP number at the time of receipt.

Although the qualified and non-qualified recorders are similar, there are differences in the instrument internals, mounting brackets and in the options provided with the recorders. A receipt inspection was performed on the seismically qualified recorders. The recorder cartons for these recorders were labeled with the associated purchase order number and the EDP number at this time. Installation of these recorders was originally planned for the Spring of 1991 during the second refuel outage. However, after some installation work had been completed, the installation of these recorders was subsequently rescheduled for the third refuel outage.

On May 21, 1992, while preparing for the third refuel outage, the Modifications Field Engineer, responsible for the installation of this EDP, became aware that not all materials required to implement EDP 11264 were available. EDP 11264 had been partially worked during the second refuel outage, but not all materials were returned to the warehouse when the EDP was deactivated. The Modification Field Engineer instructed craft personnel to obtain all EDP 11264 material from the warehouse so that an inventory could be conducted and any missing material could be reordered. Normally, simulator material would have been left in the warehouse. The craft picked up all EDP 11264 material which included the two non-qualified simulator recorders. The non-qualified recorders were then stored on an open shelf in a Building [MC] 45 lockup area, and the qualified recorders were stored in a locked cabinet [CAB] within the same area.

In September, 1992, during the third refuel outage, changeout of the Division 2 recorder was started. A craftsman was sent to the Building 45 lockup area to obtain a new qualified recorder. He mistakenly picked up one of the non-qualified recorders that were stored on the open shelf. He did not check the information on the recorder carton to verify that he had a qualified recorder designated for the main control room.

Several problems were encountered during the installation of the Division 2 recorder that indicated the wrong recorder was being installed. The top and bottom mounting brackets [RK] interfered with an existing strut support in the panel [PL]. EDP 11264 and its associated work package specified that the intended recorder had side mounted brackets which would have cleared the interference. The installer checked the configuration of the other recorder on the open shelf in the Building 45 lockup area, which was also intended for the simulator, and found the same configuration. It was then assumed that EDP 11264 was in error. Engineering was contacted and

the problem was corrected with a small modification to the panel cutout. This modification, however, was not documented in the EDP work package. The EDP owner, who is responsible for the design of the modification and assisting in resolving problems, was on the second shift during this time period and was not aware of this problem or the corrective actions taken.

A second problem was identified when the installer found the recorder was supplied with a voltage divider instead of 250 ohm resistors as specified in the EDP and its associated work package. The Modifications Field Engineer discussed the problem with Engineering and, as requested by Engineering, contacted the vendor directly to resolve the problem.

The Production Quality Assurance installation verification following installation, included verification of the wiring terminations, but not positive identification of the recorder using nameplate data.

On October 21, 1992 the Division 1 recorder was installed. For this installation a different craftsman and his foreman went to the Building 45 lockup area and obtained a qualified recorder. Although both qualified recorders (Division 1 and 2) are identical, the nameplate was located within the recorder and since he was unaware of its location he did not check the nameplate to verify that he had the correct recorder for the Division 1 panel. No problems were encountered while installing this recorder.

During his walkdown of the EDP following its completion, the EDP owner did not identify that a non-qualified recorder was installed in the Division 2 main control room panel.

On November 3, 1992 the control room recorders were programmed, calibrated and placed in service.

On January 6, 1993 it was discovered that a non-qualified recorder was installed in the main control room. An engineering analysis concluded that although the simulator recorder installed in the main control room met most of the specifications for this application, it could not be seismically qualified through analytical methods. Thus, on January 19, 1993, it was concluded that the recorder could not be considered OPERABLE per Technical Specification section 3.3.7.5 when the plant entered MODE 2 (Startup) following the third refuel outage on November 4, 1992.

Cause of Event:

The root cause of this event was a procedural deficiency in that the plant modification installation procedure did not require positive identification and documentation of a component installed in the plant. The recorder was installed in the main control room without verifying, using nameplate information, that the proper recorder was installed. A contributing cause was inattention to detail by those involved [utility non-licensed] in the installation of the EDP. There were numerous indicators of a problem, but no one challenged the installation. Proper self-checking was not utilized by Modifications and Engineering personnel involved [utility non-licensed]. Also, the Production Quality Assurance installation verification [utility non-licensed] following installation, included verification of the wiring terminations, but not positive identification of the recorder using nameplate data.

This event is believed to be an isolated incident. Twenty-eight (28) Westronic recorders installed in the main control room during the second and third refuel outages were verified to be properly installed with no problems found.

Analysis of Event:

The event involved Main Control Room recorder T50-R802B, "Division 2 Drywell and Torus Pressure." This recorder is required to be OPERABLE per Technical Specification 3.3.7.5 in MODES 1 and 2 (Power Operation and Startup). Engineering analysis determined that the recorder was functional, however, it did not meet the seismic requirement. Had a seismic event occurred it is assumed that this recorder would have failed. There were no seismic events near the site during the time period that the non-qualified recorder was installed. There are no automatic actions that are initiated by this recorder. Data provided by the recorder is utilized by operators when implementing portions of the Emergency Operating Procedures. The recorder installed in Division 1, which monitors the same parameters, was seismically qualified and available.

Corrective Actions:

The non-qualified recorder installed in the main control room Division 2 panel was replaced with a qualified recorder.

The Plant Modification Group has verified that twenty-eight (28) other Westronic recorders in the main control room installed during the second and third refuel outages were the correct type recorders for the specified panel position.

Nuclear Engineering has updated the appropriate engineering data bases to reflect the proper recorder serial numbers as they are now installed in the Division 1 and 2 main control room panels.

Subsequent to the purchase of these recorders, the method to generate and issue purchase requisitions, purchase orders and receipt documents was converted to an all electronic process. The electronic process insures that information is consistently provided on all purchase documents. This resolves the concern that required information was not effectively communicated to those who receive material at the warehouse and to the vendor.

The Modifications Group will develop a consistent policy for staging, controlling and issuing material for EDPs. Included will be guidance for segregating simulator material from plant material. This will be completed by March 31, 1993.

Receipt inspection procedure, FIP-IN1-01, "Inspections" will be clarified to explicitly require verification of identification and markings for all QA level 1 material. This will be completed by June 30, 1993.

Nuclear Engineering will revise procedure FIP-CM1-12, "Engineering Design Packages" to require that installed QA level 1 material matches the material specified in the EDP. This will be completed by June 30, 1993.

Nuclear Engineering will revise procedure FIP-CM1-18, "Implementation of Modifications" to require yellow line verification that newly installed QA level 1 material matches the material specified in the EDP as well as additional items which the EDP requests to be verified. This will be completed by June 30, 1993.

Maintenance will revise procedure NPP-MA1-01, "Work Control" to clarify the requirements for recording serial number and PIS number for replacement parts in the work package. This will be completed by June 30, 1993.

This event and applicable lessons learned will be discussed in Technical Staff and Managers continued training, in the Maintenance personnel continued training, and with Production QA, Nuclear Engineering,

Modifications and Receipt Inspector personnel. Among the lessons learned to be discussed will be the need to positively identify and document components being installed, the need to document any changes to an EDP, the need to communicate with the EDP owner when problems are encountered with an EDP, and the need to use self-checking. This will be completed during the 1993 training cycle.

To provide further assurance that this is an isolated event, Quality Assurance will review several QA level 1 installations performed by the Modifications group during the third refuel outage. The review will entail identifying QA level 1 components that were installed for which an inspector did not document that he verified the component identification. These QA level 1 components which are readily accessible will have their identification verified. The need for further action will be determined based on the outcome of this review. The review is expected to be completed by March 31, 1993.

A Human Performance Enhancement System (HPES) review was conducted.

Previous Similar Events:

There are no previous events similar to this.

Failed Component Data:

There were no failed components.