

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Fermi 2										DOCKET NUMBER (2) 0 5 0 0 0 3 4 1 1										PAGE (3) 1 OF 4																													
TITLE (4) Actuation of Control Center HVAC Emergency Mode - Caused by Spurious Trip of Radwaste Building Exhaust Radiation Monitor																																																	
EVENT DATE (5) 0 1 0 6 8 6										LER NUMBER (6) 8 6 - 0 0 1 - 0 0 0 2 0 5 8 6										REPORT DATE (7) 0 1 0 6 8 6										OTHER FACILITIES INVOLVED (8) FACILITY NAMES DOCKET NUMBER(S) 0 5 0 0 0 0																			
OPERATING MODE (9) 4										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																																							
POWER LEVEL (10) 01010										20.402(b)										20.405(c)										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)																			
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LICENSEE CONTACT FOR THIS LER (12)																																																	
NAME Lewis P. Bregni, Compliance Engineer																				TELEPHONE NUMBER 311 13 518 16 1513 11 B																													
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																	
CAUSE SYSTEM COMPONENT MANUFACTURER REPORTABLE TO NRC																																																	
SUPPLEMENTAL REPORT EXPECTED (14)																				EXPECTED SUBMISSION DATE (15)																													
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)																				<input type="checkbox"/> NO																													
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																																																	

At 2359 hours on January 6, 1986, with the plant in Operational Condition 4 (cold shutdown), the control room operator noticed an upscale/inop alarm for the Radwaste Building gaseous effluent radiation monitor. The operator verified automatic actuation of the emergency (recirculation) mode of the Control Center HVAC (CCHVAC) and isolation of the Radwaste Building HVAC (RWHVAC) and sent a chemistry technician to investigate. The chemistry technician cleared the radiation monitor alarm and the monitor returned to normal. The operator reset the CCHVAC and the RWHVAC and returned the ventilation systems to normal status at 0012 hours on January 7, 1986. A noble gas grab sample, obtained at the radiation monitor, indicated no detectable radioactivity. The upscale alarm is thought to have been spurious, related to radiation monitor system microprocessor communications problems which have frequently occurred at midnight. During this investigation, on January 27, 1986 at 1927 hours an addition actuation signal was generated. The cause and resolution of these problems are still under investigation. A supplemental report will be submitted.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

At 2359 hours on January 6, 1986, while the plant was in Operational Condition 4 (cold shutdown), the control room Nuclear Supervising Operator (NSO) noticed annunciation in alarm window 3D46, "Radwaste Bldg Vent Exhaust Radiation Monitor Upscale/Inop". Annunciation in this window indicates a high radiation alarm/trip of the Radwaste Building ventilation exhaust gaseous effluent radiation monitor. This monitor is an Eberline System Particulate Iodine and Noble Gas (SPING) 3 monitor. Per plant design and Technical Specifications, this alarm/trip automatically isolates the Radwaste Building HVAC and initiates the Recirculation Mode of the Control Center HVAC; the latter is an Engineered Safety Feature (ESF) actuation. Automatic isolation of Radwaste HVAC and actuation of the Central Center HVAC recirculation mode were verified by the operator.

Concurrently, the shift chemistry technician noticed local (flashing light) alarms at the Radwaste Building SPING monitor, indicating high radiation and/or mechanical trouble conditions. The chemistry technician verified the local reading at the monitor for the low range noble gas channel. The chemistry technician returned to the Control Center and notified the operator of these conditions.

The SPING monitor reading was 9.1 E-7 microcuries per cubic centimeter ($\mu\text{Ci/cc}$) (Xe-133 Equivalent), which was below the high radiation alarm/trip setpoint of 2.0 E-6 $\mu\text{Ci/cc}$. The high radiation alarm/trip setpoint was established at three times average background level, based on guidance in the Offsite Dose Calculation Manual (ODCM), which states that if no release is planned for a particular pathway, the monitor setpoint should be established as close to background as practical, to alarm if an inadvertent release should occur, without causing spurious alarms.

The shift chemistry technician attempted to verify the monitor high radiation alarm at the SPING radiation monitoring system control terminal, the Eberline CT-2B, in the Control Center. The chemistry technician noted that the alarm condition light on the CT-2B was not illuminated. He then cleared and reset the alarm, returning the Radwaste SPING unit to normal status. Detail history printouts from the CT-2B showed an alarm condition and average concentration of 5.08 E-6 $\mu\text{Ci/cc}$ in the noble gas channel of the Radwaste Building SPING during the ten minute interval from 2350-0000 hrs.

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APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

The Control Room NSO conferred with the chemistry technician and the Radwaste Control Room operator to verify that there were no known radiological operations in progress in the Radwaste Building, (e.g., radwaste processing), that no area radiation monitors were indicating a high radiation alarm condition, and that the Radwaste Building SPING alarms had been cleared and the unit was indicating normal conditions. In addition, the Control Room NSO had been made aware of spurious alarms which had occurred on previous occasions around midnight. The previous alarms had been attributed to problems in the microprocessor/communications interface between the SPING CT2B control terminal and SPING units. From this information, the Control Room NSO determined that the alarm condition was no longer present and probably was spurious.

At 0012 hours on January 7, the Control Room NSO restored the Control Center HVAC and the Radwaste HVAC to normal status. The chemistry technician was assigned to obtain a followup noble gas grab sample at the Radwaste SPING monitor. This was done at 0150 hours. Sample analysis revealed no activity above the Lower Limit of Detection (LLD) as defined in Technical Specification Table 4.11.1.1.1-1. This was reported to the Control Room NSO at 0300 hours. The Nuclear Shift Supervisor (NSS) notified the NRC Operation Center of the ESF actuation, in accordance with 10CFR50.72(b)(2)(ii), at 0338 hours.

This event has been reviewed jointly by Detroit Edison Operations, Radiation Chemistry, Technical and Engineering staff. It has been determined that system alarm/trips and resulting automatic actuations were in accordance with plant design and Technical Specifications. Automatic actuation of the Control Center HVAC Recirculation mode upon detection of high radiation in building effluent SPING monitors is part of the conservative design basis of the Fermi-2 Control Room.

This design is intended to provide the maximum protection to the Control Room operators in case of a radiological release from any of the buildings of the power plant. In the January 6 event, the Control Center HVAC responded to the high radiation signal as designed.

Response actions of plant personnel appear to have been timely, effective and in accordance with approved plant procedures. It does not appear that there was at any time a deviation from plant Technical Specifications related to this event, nor any release of radioactive effluents in excess of limits prescribed in the Radioactive Effluent Technical Specifications (RETS).

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

The possibility of the initiating alarm/trip signal having been spurious is currently being investigated by plant staff. Additional followup actions are being pursued to prevent recurrence. Specific followup action to identify the source of the alarm/trip is being taken as follows:

1. Trouble shooting was performed on the SPING unit and the alarm circuitry, and no equipment problems were identified.
2. Testing and evaluation of the Radwaste SPING unit and the SPING system are being conducted to identify the source of the trip signal. Diagnostic testing includes the use of a logic analyzer between the SPING and the CT-2B to capture any initiation signal. In addition, a line voltage monitor is being used to explore for voltage transients which could be the source of the trip signal. On January 27, at 1927 hours an additional initiation signal was generated during this testing. This sequence of events is still under investigation and will be described in a supplemental report.

Robert S. Lenart
Plant Manager

**Detroit
Edison**

Fermi-2
6400 North Dixie Highway
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February 5, 1986
NP860055



Nuclear
Operations

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

Gentlemen:

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

Subject: Transmittal of Licensee
Event Report 86-001

Please find enclosed LER No. 86-001-00, dated February 5, 1986, for a reportable event which occurred on January 6, 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: P.M. Byron
M.D. Lynch

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