

NINE MILE POINT—UNIT 2/P.O. BOX 63, LYCOMING, NY 13093/TELEPHONE (315) 343-2110

July 1, 1988

United States Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

RE: Docket No. 50-410  
LER 88-24

Gentlemen:

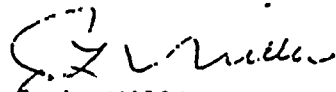
In accordance with 10 CFR 50.73, we hereby submit the following  
Licensee Event Report:

LER 88-24 Is being submitted in accordance with 10 CFR 50.73  
(a) (2) (iv), "Any event or condition that resulted in  
manual or automatic actuation of any Engineered Safety  
Feature (ESF), including the Reactor Protection System  
(RPS)."

A 10FR50.72 (b)(2)(ii) report was made at 0208 hours on  
June 6, 1988.

This report was completed in the format designated in NUREG-1022,  
Supplement 2, dated September 1985.

Very truly yours,

  
J. L. Willis  
General Superintendent  
Nuclear Generation

JLW/PB/mjd

Attachments

cc: Regional Administrator, Region 1  
Sr. Resident Inspector, W. A. Cook

~~8207110100~~ SP



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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>Nine Mile Point Unit 2</b>	DOCKET NUMBER (2) <b>0 5   0   0   0   410</b>	PAGE (3) <b>1 OF 04</b>
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TITLE (4) **Engineered Safety Feature Actuation due to Resetting a Failed Radiation Monitor Microcomputer**

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)			
06	05	88	88	024	00	07	01	88	N/A		0 5   0   0   0			
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
OPERATING MODE (9)			20.402(b)			20.405(c)			50.73(a)(2)(iv) <input checked="" type="checkbox"/>			73.71(b)		
POWER LEVEL (10)			20.406(a)(1)(i)			50.36(e)(1)			50.73(a)(2)(v) <input type="checkbox"/>			73.71(e)		
068			20.406(a)(1)(ii)			50.36(e)(2)			50.73(a)(2)(vii) <input type="checkbox"/>			OTHER (Specify in Abstract below and in Text, NRC Form 365A)		
			20.406(a)(1)(iii)			50.73(a)(2)(i) <input type="checkbox"/>			50.73(a)(2)(viii)(A) <input type="checkbox"/>					
			20.406(a)(1)(iv)			50.73(a)(2)(ii) <input type="checkbox"/>			50.73(a)(2)(viii)(B) <input type="checkbox"/>					
			20.406(a)(1)(v)			50.73(a)(2)(iii) <input type="checkbox"/>			50.73(a)(2)(ix) <input type="checkbox"/>					

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
<b>Robert E. Jenkins, Assistant Supervisor, Technical Support</b>	AREA CODE <b>315</b> NUMBER <b>349-4220</b>

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS
X	IL	CPU	K020	Y	X	IL	JX	K020	Y
X	IL	IMOD	K020	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

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

While at 68% power on June 5, 1988 at 2224 hours, the secondary containment isolated and the Standby Gas Treatment (GTS) and emergency Reactor Building Ventilation (HVR) systems auto-initiated on a spurious trip signal.

At 2129 hours, the Division 2 Above Refuel Floor Radiation Monitor (RE14B) lost communication with the Digital Radiation Monitoring System (DRMS) computer. Radiation Protection (RP) personnel attempted to restore the microcomputer by pushing the reset switch. However, the microcomputer could not be restored due to a hardware failure. Resetting the microcomputer caused a spurious trip signal which led to the auto-initiations. The root cause is the lack of training of RP personnel in DRMS alarm response.

Immediate corrective actions by NMPC operators were to monitor control room panel indications. Operators observed that the remaining Division 2 monitors had also lost communication with DRMS. Consequently, all Division 2 monitors were declared inoperable and the associated Technical Specification action statements were entered. The failed components were identified and replaced and Division 2 monitors were returned to service on June 7, 1988. The RE14B was restored on June 9, 1988. Additional corrective actions include training and Lessons Learned documents for applicable departments.



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		88	024	00	02	OF	04

TEXT (If more space is required, use additional NRC Form 308A's) (17).

I. DESCRIPTION OF EVENT

While at 68% power on June 5, 1988 at 2224 hours, the secondary containment isolated and the Standby Gas Treatment (GTS) and emergency Reactor Building Ventilation (HVR) systems auto-initiated on a spurious trip signal. Prior to the event, the GTS Train B was operating to control drywell pressure.

At 2129 hours, the Digital Radiation Monitoring System (DRMS) computer indicated that the Above Refuel Floor Radiation Monitor, 2HVR\*RE14B, lost communication with the DRMS. Some time after 2200 hours, Niagara Mohawk Radiation Protection (RP) personnel noted the loss of communication alarm while performing their routine check of the DRMS hourly alarm report. While RP personnel were discussing what actions should be taken in response to the alarm, control room operators notified RP personnel that the alarm had also been observed in the control room and requested that the condition be investigated. Subsequently, a technician was dispatched to the RE14B microcomputer to investigate and correct the problem. The technician attempted to restore the microcomputer by pushing the reset switch but the reset process appeared to be unsuccessful. RP personnel continued investigating.

At 2224 hours, the secondary containment isolated and GTS Train A and emergency HVR auto-initiated. Niagara Mohawk control room operators received indication in the control room of the unexpected actuations but did not observe any indication of the initiating condition. A problem with RE14B and the DRMS computer was suspected, however, since they had observed the RE14B DRMS alarms come in.

Immediate corrective actions were to observe the visual alarms at the DRMS control and indication panel, 2CEC\*PNL880, and to contact RP, Instrument and Controls (I&C) and computer personnel to investigate and correct the problem. Operators observed that all Division 2 safety-related monitors had lost communication with the DRMS computer. Consequently, all Division 2 monitors, including RE14B, were declared inoperable and the associated Technical Specification action statements were entered.

Subsequently, the affected DRMS computer loop and Division 2 monitors, with the exception of RE14B, were returned to service on June 7, 1988. The RE14B was returned to service on June 9, 1988. At that time, GTS and emergency HVR were secured, and normal HVR was returned to service.

II. CAUSE OF EVENT

The cause of the loss of communication with RE14B was a failure of a Central Processing Unit (CPU) card in the RE14B microcomputer. Multiple coincidental hardware failures in the Division 2 safety-related DRMS computer loop were the cause of the loss of communication with the remaining Division 2 monitors.

The causes for the CPU component failure and the multiple coincidental hardware failures are unknown.



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TEXT (If more space is required, use additional NRC Form 306A's) (17)

The immediate cause of the event was resetting the RE14B microcomputer. By design, resetting it will momentarily close the relay contacts which cause a secondary containment isolation and auto-initiation of GTS and emergency HVR. RP personnel on shift were inexperienced with the DRMS and were not aware of this design feature. Therefore, the root cause of the event is a lack of training on the reset function of the microcomputer and the proper response to loss of communication alarms.

III. ANALYSIS OF EVENT

There were no adverse safety consequences due to this event. The failure of a safety-related radiation monitor is controlled by Technical Specifications. Therefore, any process effluents monitored by the radiation monitors that became inoperable were monitored by other means prescribed in the Technical Specifications. In the case of RE14B, the auto-initiation of Engineered Safety Features, such as GTS, preclude the uncontrolled release of radioactivity during any operational or emergency condition. GTS and emergency HVR systems are designed to operate so as to limit radioactive releases during an accident.

There were no radioactive releases during this event. Division 1 monitors remained operable throughout the event, thus providing a redundant means of monitoring important process effluents in the event of an unexpected release.

The Division 2 monitors were out of service for approximately two days. The RE14B monitor was inoperable for approximately four days.

IV. CORRECTIVE ACTIONS

Immediate corrective actions were to observe the visual alarms at the DRMS control and indication panel, 2CEC\*PNL880, and to contact RP, I&C and computer personnel to investigate and correct the problem. Operators observed that all Division 2 monitors had lost communication with the DRMS computer. Consequently, all Division 2 monitors, including RE14B, were declared inoperable and the associated Technical Specification action statements were entered.

Further corrective actions were to troubleshoot and replace defective cards and modules in both the RE14B microcomputer and the DRMS panel. The spare components installed were tested and the associated monitors were returned to service.





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TEXT (If more space is required, use additional NRC Form 306A's) (17)

Additional corrective actions are:

1. A Lessons Learned document will be issued to Operations, Computer, I&C and RP personnel to describe the reset function of the radiation monitor microcomputer and to provide the proper response to loss of communication alarms.
2. As requested by the RP Unit Supervisor, a Training Modification Request (TMR No. H88-24) has been issued to the RP Training Department to provide continued training to RP personnel on the proper response to DRMS alarms.
3. A Problem Report has been issued to Engineering to evaluate the possibility of modifying the reset function to prevent closing relay contacts.
4. The root causes for the component failures are unknown. However, the failed components have been returned to the vendor and the vendor will be requested to perform a failure analysis. If additional corrective actions are warranted as a result of the analysis, a supplement will be issued to describe any additional actions taken.

V. ADDITIONAL INFORMATION

A. Identification of Components Referred to in this LER

Component	IEEE 803 EIS Funct	IEEE 805 System ID
Standby Gas Treatment System (GTS)	N/A	BH
Reactor Building Ventilation (HVR)	N/A	VA
Emergency Recirculation System (HVR)	N/A	VA
Reactor Building	N/A	NG
Radiation Monitor	MON	IL
Digital Radiation Monitoring System (DRMS)	N/A	IL

B. Previous Similar Events - None

C. Failed Components-

- SRMS Interface NIM Module, Part No. 450957-001
- SRMS Isolation NIM Module, Part No. 450958-001
- Power Supply, Part No. 45094-002
- CPU Board, Part No. 451126-002
- System Board, Part No. 450440-100

The RE14B microcomputer is manufactured by Kaman Instrumentation Corp., Model KEM-P

