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)
Clinton Power Station	0 5 0 0 0 4 6 1	1 OF 0 3

TITLE (4) Malfunction of Process Radiation Monitor During Check Source Function Results in Premature Re-Landing Lead Wires and Isolation of Hydrogen/Oxygen Monitor

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)
									NONE	0 5 0 0 0
0 1	1 4	8 8	8 8	0 0 3	0 0	0 2	1 0	8 8		0 5 0 0 0

OPERATING MODE (9)	POWER LEVEL (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1	1 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
	AREA CODE
R. F. Schaller, Assistant Plant Manager - Operations, EXT 3205	2 1 7 9 3 5 - 1 8 8 1

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	
X	I L	M O N	E 0 7 0	Y							

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)

ABSTRACT

On January 14, 1988, with the plant in Mode 1 (POWER OPERATION) at approximately 100% reactor power, the Division 1 Containment Monitoring System containment isolation valves for the hydrogen/oxygen monitor isolated. The isolation occurred during channel functional testing (CFT) of the Channel A containment ventilation exhaust process radiation monitor (PRM). The event was identified by operators while walking down backpanels during shift turnover. Following identification of the isolation, the radiation level was verified to be normal, the isolation logic was reset and the valves were reopened. The cause of the event is attributed to a malfunction of the PRM that resulted in illumination of the green "Normal" status light. Illumination of this light provides indication that the check source function of the monitor including a momentary activation of the output trip relay is complete. Based on this light illuminating, lead wires, previously lifted to prevent seal-in of the trip signal, were re-landed allowing the momentary activation of the output trip relay to cause the isolation. The CFT procedure has been revised to require additional confirmation of check source cycle completion. A plant modification will remove the momentary activation of the output trip relay at the end of the check source function. A maintenance work request has been initiated to troubleshoot the PRM.

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

DESCRIPTION OF EVENT

On January 14, 1988, at approximately 2230 hours, with the plant in Mode 1 (POWER OPERATION) at approximately 100% reactor [RCT] power, the Division 1 Containment Monitoring [IK] System containment isolation [JM] valves [ISV] for the hydrogen/oxygen monitor [45] isolated. The event was identified by operators at 2315 hours on January 14, 1988, while walking down backpanels [PL] during the shift turnover. The isolation occurred while Control and Instrumentation technicians were performing a channel functional test on the Channel A containment ventilation [VA] exhaust process radiation monitor [MON] (PRM) 1RIX-PR001C[IL]. The channel functional test had commenced at 2122 hours on January 14, 1988, and was completed at 2230 hours on January 14, 1988. Following identification of the isolation, operators verified the radiation level to be normal and reset the isolation logic. The isolation valves were reopened at 2339 hours on January 14, 1988.

No other automatic or manually initiated safety system responses were necessary to place the plant in a safe and stable condition. No other equipment or components were inoperable at the time of this event that contributed to this event.

CAUSE OF EVENT

During the channel functional test, the PRM is designed to momentarily activate the output trip relay [94]. This activation occurs at the end of the check source function which is normally expected to be active for three to five minutes. Signal lead wires [CBL] are lifted prior to commencement of the check source function to prevent seal-in of a trip signal. Following the check source cycle, a green "Normal" status light [IL] illuminates on the PRM indicating completion of the check source cycle and signal lead wires are then re-landed.

Review of Central Control Terminal printouts for the time of this event indicates that the check source was active for twenty-one minutes. This is possible if the radioactive check source is of low activity since the PRM is designed to remain in the check source cycle until 1536 counts are detected. The Control and Instrumentation technicians performing the channel functional test observed the green "Normal" status light illuminate and re-landed the signal lead wires. Review of the event indicates that the green "Normal" status light apparently illuminated prior to the check source cycle completion and prior to the programmed momentary activation of the output trip relay, resulting in actuation of the containment isolation valves.

The cause of this event is attributed to a malfunction of PRM 1RIX-PR001C that resulted in illumination of the green "Normal" status light.

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

CORRECTIVE ACTION

Procedure 9920.72, CHANNEL FUNCTIONAL TESTING OF SAFETY RELATED PROCESS RADIATION MONITORS, has been revised to require confirmation of check source cycle completion at a control terminal in addition to observing the "Normal" status light prior to re-landing signal lead wires.

Plant Modification AR-23 will remove the current designed momentary activation of the output trip relay that occurs at the end of the check source function. This modification is currently scheduled to be completed during the Spring Maintenance Outage scheduled for March 1988. This modification will also be installed on the Channel B, C, and D containment ventilation exhaust PRMs.

Illinois Power Company (IP) is continuing the investigation of the monitor malfunction. A Maintenance Work Request has been issued to troubleshoot monitor 1RIX-PR001C. IP will submit a supplemental report following completion of this investigation if the investigation results significantly change the information provided in this report.

ANALYSIS OF EVENT

The event is reportable under the provisions of 10CFR50.73(a)(2)(iv) due to an automatic actuation of an Engineered Safety Feature.

Review of the event indicates that containment isolation valves 1CM011, 1CM012, 1CM047, and 1CM048 were closed from approximately 2230 hours until 2339 hours on January 14, 1988.

PRM 1RIX-PR001C provides input to a one-out-of-one high radiation trip logic for isolation of the Division 1 Hydrogen/Oxygen Monitor.

Assessment of the safety consequences and implications of this event indicates that this event was not safety significant for existing plant conditions or other plant modes or power levels since redundant monitoring was provided by the Division 2 Hydrogen/Oxygen Monitor.

ADDITIONAL INFORMATION

PRM 1RIX-PR001C is a model number DAM-1 manufactured by Eberline Instrument Corporation.

LER 87-023-00 discusses an automatic actuation of the Division II Hydrogen/Oxygen Monitor due to a PRM detector assembly failure caused by utility personnel error.

For further information regarding this event contact R. F. Schaller, Assistant Plant Manager - Operations at (217)935-8881, extension 3205.

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L45-88(02-10)-LP
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ILLINOIS POWER COMPANY

CLINTON POWER STATION, P.O. BOX 678, CLINTON, ILLINOIS 61727

February 10, 1988

10CFR50.73

Docket No. 50-461

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

Subject: Clinton Power Station - Unit 1
Licensee Event Report No. 88-003-00

Dear Sir:

Please find enclosed Licensee Event Report No. 88-003-00: Malfunction of Process Radiation Monitor During Check Source Function Results in Premature Re-Landing Lead Wires and Isolation of Hydrogen/Oxygen Monitor. This report is being submitted in accordance with the requirements of 10CFR50.73.

Sincerely yours,

F. A. Spangenberg, III
Manager - Licensing and Safety

RSF/krm

Enclosure

cc: NRC Resident Office
NRC Region III, Regional Administrator
INPO Records Center
Illinois Department of Nuclear Safety
NRC Clinton Licensing Project Manager

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