

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Clinton Power Station	DOCKET NUMBER (2): 0 5 0 0 0 4 6 1	PAGE (3): 1 OF 0 3
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TITLE (4): Auto-Start of Standby Gas Treatment System Results From Spurious Electrical Spike of Process Radiation Monitor Output Due to Detector Tube Failure

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	0	6	8	8	8	8	8				0 5 0 0 0		

OPERATING MODE (8): 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)											
POWER LEVEL (10): 1 0 0	20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)		
	20.405(a)(1)(iii)			50.36(e)(1)			50.73(a)(2)(iv)			73.71(c)		
	20.405(a)(1)(iv)			50.36(e)(2)			50.73(a)(2)(iv)			OTHER (Specify in Abstract Below and in Text, NRC Form 366A)		
	20.405(a)(1)(vi)			50.73(a)(2)(i)			50.73(a)(2)(v)(i)(A)					
	20.405(a)(1)(v)			50.73(a)(2)(ii)			50.73(a)(2)(v)(i)(B)					
20.405(a)(1)(vii)			50.73(a)(2)(iii)			50.73(a)(2)(v)(ii)						

LICENSEE CONTACT FOR THIS LER (12)						TELEPHONE NUMBER					
NAME R. F. Schaller, Assistant Plant Manager - Operations X3205						AREA CODE 2 1 7					
						9 3 5 - 8 8 8 1					

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																			
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC										
X	I	L	D	E	T					X	9	9	9	N					

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO				MONTH	DAY	YEAR

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

ABSTRACT

On January 6, 1988, with the plant in Mode 1 (POWER OPERATION) at approximately 100% reactor power, a spurious electrical spike on a Division 1 Continuous Containment Purge System (CCP) exhaust process radiation monitor (PRM) output caused the CCP System to isolate, resulting in an auto-start of the Standby Gas Treatment System (SGTS) A and B trains and isolation of the Fuel Building Ventilation System. A Division 2 CCP exhaust PRM was in a tripped condition at the time of the event due to channel functional test failure. With a Division 2 PRM tripped, the spurious electrical spike on this Division 1 PRM output resulted in CCP system isolation since the logic is one-out-of-two-twice for the high CCP exhaust radiation trip. Operators secured SGTS train A and the B train was allowed to run. Operators performed the auto-isolation checklist and found no discrepancies. The cause of the event is attributed to random radiation detector tube failure on the Division 1 monitor. The detector tube was replaced. The event was not safety significant since the systems responded to the high exhaust radiation output as designed. This event is reportable under the provisions of 10CFR50.73(a)(2)(iv) due to an automatic actuation of an Engineered Safety Feature.

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FACILITY NAME (1)  Clinton Power Station	DOCKET NUMBER (2)  0 5   0 0   0 4   6 1   8 8	LER NUMBER (6)			PAGE (3)		
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		8 8	— 0 0 2	— 0 0	0 2	OF	0 3

TEXT (if more space is required, use additional NRC Form 366A (9-83))

DESCRIPTION OF EVENT

On January 6, 1988, at approximately 2342 hours, with the plant in Mode 1 (POWER OPERATION) at approximately 100% reactor [RCT] power, a spurious electrical spike on a Division 1 Continuous Containment Purge System (CCP) [VA] exhaust process radiation monitor IRIX-PRO42A [IL] output caused the CCP System to isolate, resulting in an automatic start of the Standby Gas Treatment System (SGTS) [BH] A and B trains and isolation of the Fuel Building Ventilation System [VG]. A Division 2 CCP exhaust process radiation monitor IRIX-PRO42D was already inoperable and had been placed in a tripped condition at 2315 hours on January 5 due to failing a channel functional test. With a Division 2 monitor tripped, a spurious electrical spike on this Division 1 monitor resulted in the CCP isolation. Logic for CCP isolation and SGTS actuation is one-out-of-two-twice for the high exhaust radiation trip. Operators secured the SGTS A train and the B train continued to run. The operators performed the auto-isolation checklist with no discrepancies identified. The high radiation logic for the SGTS remained in the tripped condition until 0120 hours on January 7 when the logic was reset to perform a drywell purge.

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

The cause of this event is attributed to random equipment failure. Troubleshooting of monitor IRIX-PRO42A determined that the radiation detector tube failed.

On December 11 and 14, 1987, spiking was observed on the IRIX-PRO42A monitor. Maintenance Work Request (MWR) C49996 was initiated on December 14 to troubleshoot and correct the problem. The spiking was thought to be infrequent and of a conservative nature (would cause a trip) and therefore operability was considered not to be affected. Work on this MWR did not begin until January 11, 1988. Review of the timeliness in processing this MWR indicates that the event would not have occurred if the personnel involved in processing the MWR had recognized the potential for equipment actuations.

CORRECTIVE ACTION

The radiation detector tube for monitor IRIX-PRO42A was replaced under MWR C49996.

A copy of this LER will be provided to operations and maintenance supervision for their review of the lessons learned.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (if more space is required, use additional NRC Form 288A's) (17)

ANALYSIS OF EVENT

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

Monitor IRIX-PR042D was inoperable during monitor repair from 2315 hours on January 5, 1988, until 0845 hours on January 7, 1988. This Division 2 channel was in the tripped condition during this period. Monitor IRIX-PR042A was inoperable from 1120 hours on January 11, 1988, until 2310 hours on January 12 during detector tube replacement. This Division 1 channel was in the tripped condition during this replacement. The CCP System was isolated from 2342 hours on January 6, 1988 until 0645 hours on January 7. The Fuel Building Ventilation System was isolated from 2342 hours on January 6, 1988 until 1710 hours on January 7.

Assessment of the safety consequences and implications of this event indicates that the event was not safety significant for existing plant conditions or other plant modes or power levels. During the event the CCP, SGTS and Fuel Building Ventilation Systems responded as designed to the high exhaust radiation output signal. The IRIX-PR042A monitor spiking was of a conservative nature, that is, caused the safety systems to initiate.

ADDITIONAL INFORMATION

The radiation detector tube that failed was manufactured by LND Incorporated and was model number 10450-B28, manufacturer part number TUG M5.

There have been no previous LERs at Clinton Power Station caused by random process radiation monitor detector tube failure that resulted in an ESF actuation.

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

U-601129  
L45-88(01-29)-LP  
2C.220

ILLINOIS POWER COMPANY



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

January 29, 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. 88-002-00

Dear Sir:

Please find enclosed Licensee Event Report No. 88-002-00:  
Auto-Start of Standby Gas Treatment System Results From Spurious  
Electrical Spike of Process Radiation Monitor Output Due to Detector  
Tube Failure. This report is being submitted in accordance with the  
requirements of 10CFR50.73.

Sincerely yours,

A handwritten signature in cursive script that reads 'F. A. Spangenberg, III'.

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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