NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/85

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)

Engineered Safety Feature Actuation Due To Spiking On Intermediate Range Monitor A

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)
1 0	2 4	8 6	8 6	—	0 1 7	— 0 2	1 2	3 1	8 6	None	0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)	5
POWER LEVEL (10)	0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
	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)

	73.71(b)
	73.71(c)
X	OTHER (Specify in Abstract below and in Text, NRC Form 366A)

Supplement

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
R. W. Morgenstern, Director-Plant Technical, Ext. 3210	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 1	3 1	8 7

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

On October 24, 1986, at 0454 hours with the plant in mode 5, 0% reactor power, the Main Control Room (MCR) received an automatic initiation of the Reactor Protection System (RPS) trip function which was caused by an upscale reading from the Intermediate Range Monitor Channel A (IRM-A) during single rod scram testing.

The cause of this event was initially believed to be electronic circuit noise on IRM-A. Spiking IRMs without RPS actuations had been previously observed during two RPS trips on October 15, 1986, (LER-86-010-00). At the time of this event, individual rod scram testing was being performed. The RPS trip was initiated by an upscale high trip signal on IRM-A when the control rod 16-41 was scrammed. Shorting links had been removed so a single IRM upscale high trip signal would cause an RPS trip.

After the scram, the RPS system was reset and testing continued. This testing was subsequently suspended at 0835 hours. Investigation into this event is continuing. Our investigation to date has determined that IRM electronic circuit noise was not the cause of the IRM spiking. Further testing will concentrate on IRM Mechanical noise as the root cause. A supplemental report will be submitted following completion of our investigation. This event is reportable in accordance with 10CFR50.73(a)(2)(iv).

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

DESCRIPTION OF EVENT

On October 24, 1986, at 0454 hours, with the plant in mode 5, 0% reactor power, and individual rod scram testing in progress, an automatic actuation of the Reactor Protection System (RPS) trip function occurred. The control rod at core position 16-41 had been individually scrammed 1 to 5 seconds prior to the RPS trip. The event was initiated by a spurious upscale reading on the Intermediate Range Monitor Channel (IRM) (A). Shorting links had been removed so a single IRM trip signal would initiate an RPS trip. After the RPS trip, the following facts were considered by the Shift Supervisor and Shift Test Director:

- The RPS trip occurred after all rods were fully seated, not upon rod withdrawal.
- There were no core flux changes indicated on the Source Range Monitors (SRMs).
- IRM spiking had been previously noted during surveillances and cable movement. This spiking was believed to be the result of electrical induced circuit noise, unrelated to individual rod scram testing.

Since no safety concern was identified, the RPS system was reset and individual rod scram testing continued at 0537 hours. Testing was subsequently suspended at 0835 hours in accordance with management direction, pending further investigation and evaluation of this event.

CAUSE OF THE EVENT

The cause of the RPS trip was initially believed to be electrical circuit noise on IRM-A. Prior spurious upscale IRM readings had been noted on IRM Channels A & G as a result of RPS trips on October 15, 1986, as discussed in LER 86-010-00. Although the RPS trips were caused by different trip signals, electrical circuit noise was believed to have occurred as a result of the scram solenoids de-energizing following the RPS trips. Further investigation into this matter has determined that electrical noise is not the cause of the IRM spiking. During testing of adjacent control rods (core positions 12-41, 12-45, and 16-45), spiking was noted on IRM-A at about 20% of scale, indicating possible IRM Mechanical noise effects. Our investigation of this matter is continuing and further testing will concentrate on IRM Mechanical noise as the possible root cause.

The additional testing needed to establish IRM Mechanical noise as the root cause was delayed until the conditions for core alterations could be met. Therefore additional time will be required to complete our investigation and to submit our final supplemental report on this event. The expected submittal date for our final report is 01-31-87.

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

ANALYSIS OF EVENT/SAFETY SIGNIFICANCE

The event was evaluated to be reportable based on an actuation of the RPS as defined in 10CFR50.73(a)(2)(iv). This trip, which was caused by a spurious IRM-A upscale reading, has no safety significance in modes 4 and 5 because only one rod may be withdrawn. In modes 1, 2, and 3, a single spurious signal on IRM-A would not cause an RPS trip, because shorting links would be in place and 2 out of 4 logic would be needed for an RPS trip. Our investigation of this matter is continuing. A supplemental report will be submitted following completion of our investigation.

CORRECTIVE ACTION

Additional testing is being performed to determine the root cause and identify appropriate corrective action, which will be addressed in our supplemental report.

ADDITIONAL INFORMATION

LER 86-010-00 reported spiked IRM readings during RPS trips.

For further information contact R. W. Morgenstern, Director - Plant Technical, at (217)935-8881, extension 3210.

U-600801
L30-86(12-31)-L
1A.120

ILLINOIS POWER COMPANY

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

December 31, 1986

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. 86-017-02

Dear Sir:

Please find enclosed Licensee Event Report No. 86-017-02: Engineered Safety Feature Actuation Due to Spiking On Intermediate Range Monitor A. This report is being submitted in accordance with the requirements of 10CFR50.73.

Sincerely yours,

D. L. Holtzscher for

F. A. Spangenberg
Manager - Licensing and Safety

RLC/bsa

Enclosure

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

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