NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-
EXPIRES 06/30/2001

LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1):	DOCKET NUMBER (2)	PAGE (3)
LaSalle County Station, Unit 1	05000373	1 of 4

TITLE (4) Lifted Leads Result in Inoperable Average Power Range Monitor Thermal Power Upscale Trip

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 NAME	DOCKET NUMBER
09	26	99	99	005	00	10	26	99	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	087

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

☐ 20.2201(b)	☐ 20.2203(a)(2)(v)	☒ 50.73(a)(2)(i)	☐ 50.73(a)(2)(viii)
☐ 20.2203(a)(1)	☐ 20.2003(a)(3)(i)	☐ 50.73(a)(2)(ii)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(i)	☐ 20.2003(a)(3)(ii)	☐ 50.73(a)(2)(iii)	☐ 73.71
☐ 20.2203(a)(2)(ii)	☐ 20.2003(a)(4)	☐ 50.73(a)(2)(iv)	☐ OTHER
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(1)	☐ 50.73(a)(2)(v)	Specify n Abstract below or in NRC Form 366A
☐ 20.2203(a)(2)(iv)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Frank Gogliotti, Design Engineering Manager	(815) 357-6761 Extension 2137

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
☐ YES (If yes, complete EXPECTED SUBMISSION DATE)	☒ NO				

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

On September 26, 1999, it was discovered that lifted leads that defeated the output of one of the Reactor Recirculation flow converters to the Average Power Range Monitors (APRM) placed the facility in a condition where a single failure would have prevented the flow biased simulated thermal power upscale Reactor Protection System trip required by Technical Specification 3/4.3.1.

The root cause of this event was a fundamental knowledge based error for failure to recognize the inoperable APRMs. Corrective actions include conducting tailgate sessions with operations personnel regarding APRM operability with respect to the thermal power upscale trip, and reviewing the Station training program to ensure that it includes the appropriate level of detail regarding APRM operability and the flow converter.

The safety significance of this event was minimal. Two flow units are routed through a low value gate to each APRM, which provides input to the thermal power upscale trip. The other flow unit was operable and provided the flow signal to the thermal power upscale trip.

This event is reportable per 10 CFR 50.73(a)(2)(i) as a condition prohibited by the plant's Technical Specifications.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
LaSalle County Station, Unit 1	05000373	99	005	00	2 of 4

(If more space is required, use additional copies of NRC Form 366A)(17)

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor, 3323 Megawatts Thermal Rated Core Power

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

A. CONDITION PRIOR TO EVENT

Unit(s): 1 Event Date: 09/26/99 Event Time: 0200 Hours

Reactor Mode(s): 1 Power Level(s): 087
Mode(s) Name: Run

B. DESCRIPTION OF EVENT

Beginning on April 5, 1999, during the execution of surveillance LIS-NR-107, "Unit 1 APRM/RBM Flow Converter to Total Core Flow Adjustment," unexpected half-scrams occurred intermittently. Work Request (WR) 990071531-01 was prepared to determine the cause. Efforts subsequently narrowed the source of the intermittent half-scrams to "C" flow converter and determined that the problem only occurred during performance of the surveillance. The faulty component inside the flow converter has not yet been determined. The flow converters are scheduled to be replaced during refueling outage L1R08, scheduled for October 1999. Based on both zero tolerance for inadvertent half-scrams and the need to perform testing weekly, the station decided that output leads would be lifted from "C" flow converter while performing LIS-NR-107. This prevents inadvertent half-scrams and facilitates monitoring "C" flow converter's output during the surveillance. The leads were lifted only for the duration of the surveillance (less than 1 hour). The Updated Final Safety Analysis Report (UFSAR) states that a single flow unit may be removed from service for a short time. This activity has been evaluated as acceptable since the flow unit was out-of-service (OOS) for less than the allowed outage time of 6 hours specified in Technical Specification (TS) Table 3.3.1-1, "Reactor Protection System Instrumentation" Note (a).

Separately, installation activities associated with the Oscillation Power Range Monitor (OPRM) modification were in progress. During installation, an inadvertent half-scram was generated that was suspected to originate from bumping a flow converter while passing materials through the panel. To prevent recurrence during future OPRM channel installations, and because a flow converter lead was lifted under the work package mentioned previously, it was decided to incorporate the same lead-lifting solution for each OPRM channel installation. Thus the work plans for the remaining OPRM channel installations were amended to include lifting the corresponding flow converter leads either in the work package or in the OOS.

In the Operating Department review of the OPRM installation, it was recognized that the flow converters are addressed in TS 3/4.3.6, "Control Rod Block Instrumentation" and one of two flow converters are required per trip function. TS 3/4.3.1, "Reactor Protection System Instrumentation" does not specifically address flow converter operability; rather it is implicitly included via the surveillance requirements and the definition of operability.

On September 26, 1999, during a review of an OPRM modification OOS prior to its implementation, a Senior Reactor Operator (SRO) questioned the removal of the redundant flow converter from service without declaring the flow biased simulated thermal power upscale trip and rod block inoperable. Further review of the operability requirements determined that two flow converters must be operable for the trip to be operable. Problem Identification Form (PIF) L1999-04533 was submitted, and the OOS was not used. The work was subsequently completed without lifting the leads.

The work packages for the OPRM modifications that had already been used were reviewed. Installation associated with "D" and "E" APRMs used the lifted lead methodology. The leads were lifted for "D" APRM under WR No. 990009261. This work started on August 30, 1999 and was completed on September 15, 1999, but it was interrupted by a Unit scram and restart and the leads restored from September 2, 1999 until September 13, 1999. This resulted in the leads being lifted for the "D" APRM for an estimated 150 hours. The leads were lifted for the "E" APRM under OOS No. 990009150 which was installed on September 22, 1999, at 0743 hours, and was removed on September 25, 1999, at 0632 hours, for a duration of 71 hours. These activities resulted in exceeding the allowed outage time (AOT) for the flow biased simulated thermal power upscale trip.

This is reportable pursuant to 10 CFR 50.73(a)(2)(i) as a condition prohibited by the plant's Technical Specifications.

C. CAUSE OF EVENT

The root cause of this event was a fundamental knowledge based error for failure to recognize the inoperable APRMs. Station knowledge did not go to this level of detail for APRM operability relating to the flow units.

D. SAFETY ANALYSIS

The safety significance of this event was minimal. Two flow units are routed through a low value gate to each APRM, which provides input to the thermal power upscale trip. The other flow unit was operable and provided the flow signal to the thermal power upscale trip. The APRM flow biased thermal trip is not credited in any transient analysis for the current cycle.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
LaSalle County Station, Unit 1	05000373	99	005	00	4 of 4

(If more space is required, use additional copies of NRC Form 366A)(17)

E. CORRECTIVE ACTIONS

Corrective Actions to Prevent Recurrence:

1. Tailgate sessions have been held with Operations personnel regarding this event, operability of APRMs with respect to the flow unit inputs, and the requirements of 10 CFR 50.59 (complete).

2. A needs analysis will be performed to ensure that the station personnel training program includes the appropriate level of detail regarding TS 3/4.3.1 and the requirement for both flow converters to be operable in order for the flow biased thermal trip to be operable (ATM# 16802-24).

F. PREVIOUS OCCURRENCES

A review of the past five years of LERs found no previous occurrences of a system rendered inoperable in excess of its allowed outage time by improperly lifted leads.

G. COMPONENT FAILURE DATA

Since no component failures occurred, this section is not applicable.