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LaSalle Generating Station
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ComEd

December 19, 1995
United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Licensee Event Report #95-018-00, Docket #050-373 is being submitted to your office in accordance with 10CFR50.73 (a) (2) (iv).

Sincerely,

D. J. Ray
Station Manager
LaSalle County Station

DJR/ TAH /lja

Enclosure

cc: H. J. Miller, NRC Region III Administrator
K. D. Ihnen, Acting NRC Senior Resident Inspector
R. J. Zuffa, IDNS Resident Inspector
F. Niziolek, IDNS Senior Reactor Analyst
INPO - Records Center
D. L. Farrar, Nuclear Regulatory Services Manager

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NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
LaSalle County Station Unit One	05000373	1 of 5

TITLE (4)
Trip of 1B RPS Bus resulting in Half Scram due to Relay 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 NAME	DOCKET NUMBER
									LaSalle Unit Two	05000374
11	28	95	95	018	00	12	19	95	FACILITY NAME	DOCKET NUMBER

		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
OPERATING MODE (9)	1		20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(iii)		73.71(b)
POWER LEVEL (10)	87		20.2203(a)(1)		20.2203(a)(3)(ii)	X	50.73(a)(2)(iv)		73.71(c)
			20.2203(a)(2)(i)		20.2203(a)(4)		50.73(a)(2)(v)		OTHER
			20.2203(a)(2)(ii)		50.36(c)(1)		50.73(a)(2)(vii)		(Specify in Abstract below and in Text, NRC Form 366A)
			20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(viii)(A)		
			20.2203(a)(2)(iv)		50.73(a)(2)(i)		50.73(a)(2)(viii)(B)		
			20.2203(a)(2)(v)		50.73(a)(2)(ii)		50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Thomas Hammerich , Senior System Engineer	(815) 357-6761 x 2244

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
E	JE	CR120A	General Electric	Yes						

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)

On November 28, 1995 at 0519 hours, LaSalle Unit 1 was operating at approximately 87% power when the 1B Reactor Protection System (RPS) Motor Generator (M/G) Set tripped resulting in a 1B RPS Bus Trip. Loss of power to this bus resulted in a half scram and numerous Primary Containment Isolations (PCIS), including isolation of the Reactor Building Ventilation System (VR) dampers on both units. Abnormal operating procedure LOA-VR-01, "Recovery from a Group 4 Isolation or Spurious Trip of Reactor Building Vent", was entered to jumper isolation circuits such that the ventilation loss would not result in MSIV closure on high steam tunnel temperature. At 0520 hours, the 1B RPS bus was transferred to an alternate feed and ventilation was restored on both units.

A root cause investigation determined the cause of the M/G Set trip was loss of control power due to an age related failure of an auxiliary control relay.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

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

A. CONDITION PRIOR TO EVENT

Unit(s): 1/2 Event Date: 11/28/95 Event Time: 0519 Hours

Reactor Mode(s): 1/1 Modes(s) Name: Run/Run Power Level(s): 87%/100%

B. DESCRIPTION OF EVENT

On November 28, 1995 Units 1 and 2 were in Operational Condition 1 (run) at 87% and 100% power respectively. At 0519 hours, the 1B Reactor Protection System (RPS)[JE] Motor Generator (M/G) Set, 1C71-S001B, tripped resulting in a 1B RPS Bus Trip. The trip resulted in a half scram and numerous Primary Containment Isolation System (PCIS) [NH] Isolations. Both Units' Reactor Building Ventilation (VR) secondary containment isolation dampers isolated due to the PCIS actuation. The "B" RPS bus was transferred to its alternate feed at 0520 hours in accordance with LOA-RP-01 "Loss of Reactor Protection System Power", and the half scram was reset.

At 0520 hours, procedure LOA-VR-01 was entered on both units to install jumpers in the steam tunnel high temperature and differential temperature isolation circuits to prevent a Group 1 MSIV isolation due to loss of VR. VR was restarted on Unit 1 and Unit 2. The jumpers were removed on Unit 1 at 0605 hours and on Unit 2 at 0555 hours.

LGA-02, "Secondary Containment Control", was entered at 0534 hours due to high steam tunnel temperatures that resulted from loss of VR in unit 1. LGA-02 was exited at 0553 when the steam tunnel temperature was restored to acceptable level after VR was restarted. Unit 2 temperatures did not exceed the limits of LGA-02. The 1B M/G set was repaired and the B RPS bus was restored to normal on November 28, 1995 at 2146 hours.

This is reportable per 10CFR50.73(a)(2)(iv) due to an automatic actuation of an engineered safety feature (ESF).

C. **CAUSE OF EVENT**

The cause of the M/G Set failure was an age related failure of a 115 volt General Electric model CR120A relay. The 1C71-S001B-1K relay is used as an auxiliary relay between the motor overload device and the motor starter (contactor). The relay is normally energized and was in the energized state for approximately 15 years. The coil of the relay had a burnt smell and the resistance was lower than a new relay indicating shorted turns. The coil failure caused the M/G Set control power fuse to blow, shutting off the M/G set motor which caused the RPS bus trip.

The root cause was the lack of a periodic preventative replacement program for these relays in the RPS M/G Sets. The M/G Set electrical components are inspected, calibrated, and/or tested during each refueling outage, however this process was not sufficient to identity the age related failure which occurred. The periodic replacement of this component was not part of the PM program.

D. **ASSESSMENT OF SAFETY CONSEQUENCES**

The RPS and PCIS actuations occurred as expected upon loss of RPS power. The loss of cooling to the main steam tunnel could be a problem (i.e. high steam tunnel temperature and/or high differential temperature causing inadvertent actuation of the MSIV and a Group 1 isolation and subsequent scram) if the VR isolation was to remain in place for an extended period of time during power operation. The VR isolation effects both Units 1 and 2. The safety consequences of this event were minimal due to the prompt actions of the operators to jumper isolation circuits to prevent the loss of ventilation. The potential for a more significant event (i.e. Group 1 isolation and reactor scram) does exist and unnecessarily challenges the reactor safety systems. A Group 1 isolation and reactor scram has occurred during previous loss of RPS bus events.

E. **CORRECTIVE ACTIONS**

1. Immediate Corrective Actions

a. The 1B RPS M/G Set 1C71-S001B-1K relay was replaced with a new relay. The other two relays of the same model (CR120A) as the relay that failed were not as old and

are not continuously energized. They were evaluated as acceptable and not replaced.

b. The other electrical components in the 1B M/G Set cabinet were inspected and found to be acceptable. The M/G Set motor was checked and found acceptable.

2. Long Term Corrective Actions

a. The normally energized model CR120A relay in the other M/G Sets (1A, 2A and 2B) will be replaced during an outage of sufficient duration. The relays cannot be replaced with the M/G set on line.

b. A replacement frequency is being established for the normally energized CR120A relays in the RPS M/G Sets. A program to address the replacement frequency of installed relays is in progress.

c. LaSalle system engineers were notified of the potential for failure of these model relays, when continuously energized, during engineering staff meetings. A Nuclear Operating Notification (NON) was transmitted to notify the system engineers at other ComEd stations of this problem.

d. The preventive maintenance program for the RPS M/G Sets will be reviewed to ensure that where periodic replacement is appropriate, replacement schedules are established.

e. Efforts are currently underway to correct the steam tunnel temperature trip setpoint and power supply issues. The current setpoints give very little operational margin and challenge the operators to install jumpers and reset PCIS logic within a very short time frame. This issue has been classified as an operator work around.

F. **PREVIOUS OCCURRENCES**

LER NUMBER	TITLE
373/95-014-00	Unit 1 Reactor Scram Due to 1D RPS trip Causing Group 1 Isolation
373/94-015-00	Unit 1 Primary Containment Isolation and SCRAM Due to Switch Failure

G. **COMPONENT FAILURE DATA**

General Electric Model CR120A relay.