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the southern electric system

W. G. Hairston, III
Senior Vice President
Nuclear Operations

November 14, 1989

ELV-00968
0052

Docket No. 50-425

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

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
LICENSEE EVENT REPORT
ARCING POWER CABLE LEADS TO CONTAINMENT
VENTILATION ISOLATION

In accordance with 10 CFR 50.73, Georgia Power Company hereby submits the enclosed report related to an event which occurred on October 16, 1989.

Sincerely,

W. G. Hairston, III

WGH,III/NJS/gm

Enclosure: LER 50-425/1989-028

xc: Georgia Power Company
Mr. C. K. McCoy
Mr. G. Bockhold, Jr.
Mr. P. D. Rushton
Mr. R. M. Odom
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. J. B. Hopkins, Licensing Project Manager, NRR
Mr. J. F. Rogge, Senior Resident Inspector, Vogtle

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)
VOGTLE ELECTRIC GENERATING PLANT - UNIT 2	0 5 0 0 0 4 2 5	1 OF 0 4

TITLE (4)
ARCING POWER CABLE LEADS TO CONTAINMENT VENTILATION ISOLATION

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)
										0 5 0 0 0
1 0	1 6	8 9	8 9	— 0 2 8	— 0 0	1 1	1 4	8 9		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
	1	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	1 0 0	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. M. ODOM, NUCLEAR SAFETY AND COMPLIANCE	4 0 4 8 2 6 - 3 2 0 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	
B	I L	C P U	W 1 2 0	N							

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 10-16-89, a technician was preparing to replace a faulty circuit board in a Containment vent effluent radiation monitor panel. While performing this work, he contacted a power cable and arcing occurred at the terminal connection. The arcing resulted in power fluctuations at the Input/Output circuit board which subsequently failed. This led to a Containment Ventilation Isolation (CVI) actuation at 0825 CDT. Control room operators verified that no abnormal radiation condition existed in the Containment building atmosphere and reset the appropriate valves and dampers and the CVI signal.

The cause of this event was an inadequate design. The screw on the radiation monitor terminal block was too short to adequately engage the threaded opening and provide a tight, permanent connection with the attached power cable. When the technician's hand contacted the cable, the connection was loosened and arcing occurred. This screw and a similar screw in Unit 1 have been replaced.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
VEGP - UNIT 2	0 5 0 0 0 4 2 5	8 9	— 0 2 8	— 0 0	0 2 OF 0 4

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

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(iv) because an unplanned Engineered Safety Feature (ESF) actuation occurred.

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 2 was operating in Mode 1 (Power Operation) at 100% rated thermal power. Other than that described herein, there was no inoperable equipment which contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On 10-16-89, an Instruments & Controls (I&C) technician was preparing to replace a faulty Analog-to-Digital circuit board in the Data Processing Module (DPM) of the Containment vent effluent radiation monitor 2RE-2565. This process involved setting the DPM in bypass and lifting the ESF actuation leads in order to avoid an inadvertent ESF actuation while work was in progress. As he began to lift the leads inside the DPM panel, the technician contacted other wires inside the panel and noticed arcing at one of the panel's terminals to which the power cable connects. He tightened the loose terminal leads but found that the DPM was internally cycling in and out of bypass. The technician then called to advise the control room of the situation and he was told that a Containment Ventilation Isolation (CVI) had occurred.

The CVI occurred at 0825 CDT, and Train A valves and dampers moved to their proper positions. Train B valves and dampers were manually actuated and the operators then verified that the radiation level in the Containment atmosphere was normal. They noticed that 2RE-2565 was cycling in and out of bypass and began an investigation. Valves and dampers were returned to their normal positions and the CVI signal was reset at 1412 CDT.

D. CAUSE OF EVENT

1. The cause of this event was an inadequate design. The screw on the DPM terminal block was too short to adequately engage the threaded opening and provide a tight, permanent connection with the attached power cable. When the technician's hand contacted the cable, the connection was loosened and arcing occurred. The arcing led to erratic power fluctuations which caused an Input/Output circuit board to fail. This circuit board failure started the bypass function cycling and was also responsible for initiating the Train A actuation while it concurrently blocked the Train B automatic actuation from 2RE-2565.

2. Contributing to the occurrence of this event is the limited work space available inside the panel. Lifting ESF actuation leads is performed prior to beginning work that might cause an unexpected actuation on this monitor. The wires inside the DPM panel are moved to lift appropriate leads, and this movement caused the actuation. A DPM bypass switch was engaged prior to the start of this event. However, its function is to prevent erratic software indications from affecting monitor operability and could not prevent power fluctuations from causing an actuation.

E. ANALYSIS OF EVENT

Train A components functioned as designed to automatically isolate Containment ventilation. Control room operators reacted properly to manually actuate Train B components. Had an area radiation monitor detected a high radiation level Train B components would also have actuated automatically. However, no abnormal radiation level existed. Based on these considerations, there was no adverse effect to plant safety or to the health and safety of the public as a result of this event.

F. CORRECTIVE ACTIONS

1. A longer DPM terminal block screw has been installed for radiation monitor 2RE-2565 to avoid a recurrence of this event. A broadness review indicated that the same terminal block screw deficiency existed for Unit 1 radiation monitor 1RE-2565. The equivalent terminal block screw for 1RE-2565 has also been replaced.

2. The capability to block the ESF actuation signal while work is in progress could preclude the need to lift ESF signal actuation leads. Plant personnel are reviewing the feasibility of installing block switches.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
VEGP - UNIT 2	0 5 0 0 0 4 2 5	8 9	— 0 2 8	— 0 0	0 4 OF 0 4

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

G. ADDITIONAL INFORMATION

1. Failed Components:

   Input/Output Circuit Board manufactured by Westinghouse Electric Corporation.
   Part # 2347B37G01

2. Previous Similar Events:

   There have been no previous CVI actuations due to loose electrical connections.

3. Energy Industry Identification System Code:

   Radiation Monitoring System - IL

   Containment Isolation Control System - JM