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J. T. Beckham, Jr.
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Georgia Power
the southern electric system

HL-1512
001301

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

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
LICENSEE EVENT REPORT
COMPONENT FAILURE RESULTS
IN ESF ACTUATION

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a component failure which resulted in an ESF actuation. This event occurred at Plant Hatch - Units 1 and 2.

Sincerely,

J. T. Beckham, Jr.

JKB/cr

Enclosure: LER 50-366/1991-003

c: (See next page.)

IE22
1/1

c: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

NRC Form 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
PLANT HATCH, UNIT 2	0 5 0 0 0 3 6 6	1 OF 5

TITLE (4)
COMPONENT FAILURE RESULTS IN ESF ACTUATION

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQ NUM	REV	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
									PLANT HATCH, UNIT 1	0 5 0 0 0 3 2 1
0 2	1 3	9 1	9 1	0 0 3	0 0	0 3	0 8	9 1		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)			
POWER LEVEL	9 8	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		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)
		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	
STEVEN B. TIPPS, MANAGER NUCLEAR SAFETY AND COMPLIANCE, HATCH	912	367-7851

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORT TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORT TO NPRDS	
X	I L	R J X	G 0 8 0	Y E S							

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

ABSTRACT (16)

On 2/13/91 at approximately 1635 CST, Unit 1 was in Cold Shutdown and Unit 2 was in the Run mode at an approximate power level of 2397 CMWT (approximately 98% rated thermal power). At that time, the Main Control Room Environmental Control (MCREC, EIIS Code VI) system automatically transferred from the normal mode to the pressurization mode. This occurred as designed when refueling floor Area Radiation Monitors (ARM, EIIS Code IL) 2D21-K601A and 2D21-K601M tripped on a high radiation signal. After the actuation occurred, licensed Operations personnel verified proper operation of the MCREC system and that an actual high radiation condition did not exist on the refueling floor. An investigation later determined that the signal was the result of an upscale spike caused by loss of power to these ARMs. It was determined that a fuse internal to their power supply had failed. ARMs 2D21-K601A and M provide an input to the MCREC pressurization mode logic. The failed fuse was replaced and the MCREC system was returned to its normal mode of operation at approximately 2025 CST on 2/13/91.

The cause of the event is component failure. A fuse internal to the ARM power supply failed. The fuse failure was investigated and appears to be a random failure.

Corrective actions for this event included replacing the blown fuse and returning the MCREC system to its normal mode of operation.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor
Energy Industry Identification System codes are identified in the text as (EIIS Code XX).

SUMMARY OF EVENT

On 2/13/91 at approximately 1635 CST, Unit 1 was in Cold Shutdown and Unit 2 was in the Run mode at an approximate power level of 2397 CMWT (approximately 98% rated thermal power). At that time, the Main Control Room Environmental Control (MCREC, EIIS Code VI) system automatically transferred from the normal mode to the pressurization mode. This occurred as designed when refueling floor Area Radiation Monitors (ARM, EIIS Code IL) 2D21-K601A and 2D21-K601M tripped on a high radiation signal. After the actuation occurred, licensed Operations personnel verified proper operation of the MCREC system and that an actual high radiation condition did not exist on the refueling floor. An investigation later determined that the signal was the result of an upscale spike caused by loss of power to these ARMs. It was determined that a fuse internal to their power supply had failed. ARMs 2D21-K601A and M provide an input to the MCREC pressurization mode logic. The failed fuse was replaced and the MCREC system was returned to its normal mode of operation at approximately 2025 CST on 2/13/91.

The cause of the event is component failure. A fuse internal to the ARM power supply failed. The fuse failure was investigated and appears to be a random failure.

Corrective actions for this event included replacing the blown fuse and returning the MCREC system to its normal mode of operation.

DESCRIPTION OF EVENT

On 2/13/91 at approximately 1635 CST, the MCREC system automatically transferred from the normal mode to the pressurization mode as the result of a high radiation signal on refueling floor ARMs 2D21-K601A and 2D21-K601M. Licensed Operations personnel verified that an actual radiation condition did not exist on the refueling floor in accordance with procedure 34AR-601-312-2S, "Refueling Floor Area Radiation - High." They also verified that all automatic functions occurred on initiation of the pressurization mode per Unit 1 procedure 34SO-Z41-001-1S, "Control Room Ventilation System." While looking for the cause of the trip, Operations personnel noticed that the voltage indicator for power supply unit 2D21-K603A was reading downscale, the amber power supply light was not illuminated, and ARMs 2D21-K601A thru H, L, and M had tripped. They suspected that a loss of power supply might have caused these ARMs to trip. As required by plant procedures, Deficiency Card 2-91-0433 was written to document the condition and effect investigation of the cause. The MCREC system was allowed to remain in the pressurization mode while investigation of the event was in progress.

Instrument and Control (I&C) personnel investigating the event discovered a blown fuse in the power supply to the ARM circuitry. This power supply is common to ARMs 2D21-K601A thru H, L, and M. The blown fuse resulted in a loss of all power to these ARMs, resulting in the generation of a false high radiation signal (a fail-safe condition). Two of the affected ARMs, 2D21-K601A and 2D21-K601M, provide input to the MCREC system pressurization mode logic; consequently, the MCREC system automatically transferred from the normal mode to the pressurization mode per design.

The cause of the blown fuse, a 2 Amp "slow-blow" type, could not be determined. No testing or surveillance activities were in progress at the time of event. The failed fuse was replaced under Maintenance Work Order 2-91-0577. The MCREC system pressurization mode logic was reset and the system was returned to the normal mode of operation at approximately 2025 CST on 7/13/91.

CAUSE OF THE EVENT

The root cause of this event was component failure. A fuse internal to the ARM power supply failed. The failure history of the fuse was assessed by reviewing the maintenance history for power supply 2D21-K603A and this component failure appears to be an isolated event.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This report is required per 10 CFR 50.73(a)(2)(iv) because of an unplanned actuation of an Engineered Safety Feature (ESF). Specifically, the MCREC system, an ESF, changed from normal to pressurization mode when ARMs 2D21-K601A and 2D21-K601M tripped on a false upscale signal caused by loss of power.

The ARM system provides information to plant personnel concerning radiation levels at selected locations within the plant where radioactive material may be present, stored, handled, or introduced. The ARMs provide local indication as well as indication in the Main Control Room. They also alarm locally when radiation levels in that area exceed preselected setpoints, and, in the case of some of the Refueling Floor ARMs, provide a trip input to an ESF system actuation logic.

The MCREC system is designed to ensure habitability of the Main Control Room following a Loss of Coolant Accident, a Fuel Handling Accident, a Main Steam Line Break Accident, or a Control Rod Drop Accident. Specifically, the MCREC system enters the pressurization mode of operation in response to a Loss of Coolant Accident signal from Unit 1 or 2, a Refueling Floor high radiation signal from Unit 1 or 2, a Main Steam Line high flow signal from Unit 1 or 2, a Main Steam Line high radiation signal from Unit 1 or 2, or a Main Control Room air intake high radiation signal. The pressurization mode pressurizes the Main Control Room preventing inleakage of gaseous radioactive material and thereby keeping doses to Main Control Room personnel to within 10 CFR 50, Appendix A, limits.

In the fuel handling design basis accident, a fuel bundle is dropped onto the core resulting in fuel rod damage and releases of radioactive gases into the refueling floor atmosphere. The results of this design basis accident analysis indicate radiation fields sufficient to warrant the trip of selected ARMs and the resultant actuation of the MCREC system pressurization mode. The refueling floor ARM trip anticipates an actuation of the MCREC system pressurization mode resulting from a Main Control Room air intake high radiation signal. As such, it provides additional protection over that assumed in the Unit 1 and Unit 2 Final Safety Analysis Reports from the air intake high radiation trip.

In the event described in this report, the MCREC system entered the pressurization mode when refueling floor ARMs 2D21-K601A and K tripped on a false signal. This occurred when a fuse internal to the ARM power supply failed. No accident or radioactive gas release had occurred to cause the high radiation signal. The system responded as designed and would have functioned properly to protect personnel in the Main Control Room had an actual release of radioactive gas occurred on the refueling floor.

Based on the above, it is concluded this event had no adverse impact on nuclear safety.

CORRECTIVE ACTION

The blown fuse was removed and replaced with one from stock. The MCREC system pressurization mode logic was reset and the system was returned to the normal mode of operation at approximately 2025 CST on 2/13/91.

ADDITIONAL INFORMATION

No systems other than the MCREC system and the ARMs were affected by this event.

Previously reported similar events in which the MCREC system entered the pressurization mode as a result of a failed fuse was reported in LER 50-321/1991-003, dated 3/08/91. The event described in LER 50-321/1991-003 was caused by a component failure. A fuse internal to one of the ARM power supplies failed, resulting in the generation of a false high radiation signal due to the loss of that power supply. The corrective action for that event was to replace the blown fuse. Additionally, the failure history of the fuse was assessed by reviewing the maintenance history for the associated power supply, and this component failure appears to be an isolated event.

The previous corrective actions would not have prevented the occurrence of the event described in this report because this event was not caused by the the failure of the same component.

Failed Component Information:

Master Parts List Number:	2D21-K603A
Manufacturer:	General Electric
Type:	Fuse in power supply unit 2D21-K603A
Model Number:	112C2235G004
Manufacturer Code:	G080
EIIS System Code:	IL
EIIS Component Code:	RJX
Root Cause Code:	X
Reportable to NPRDS:	Yes