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Georgia Power
the southern electric system

September 1, 1994

LCV-0454

Docket No. 50-424

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

Ladies and Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
LICENSEE EVENT REPORT - CONTAINMENT VENTILATION ISOLATION
AUTOMATIC ACTUATION CIRCUITRY INOPERABLE

In accordance with the requirements of 10 CFR 50.73, Georgia Power Company (GPC) submits the enclosed report related to a condition determined to be reportable on August 10, 1994.

Sincerely,

C. K. McCoy

CKM/AFS

Enclosure: LER 1-94-5

cc: Georgia Power Company
Mr. J. B. Beasley, Jr.
Mr. M. Sheibani
NORMS

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebneter, Regional Administrator
Mr. D. S. Hood, Licensing Project Manager, NRR
Mr. B. R. Bonser, Senior Resident Inspector, Vogtle

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

APPROVED 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 (MNBB7714), 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)
Vogtle Electric Generating Plant - Unit 1	0 5 0 0 0 4 2 4	1 OF 4

TITLE (4)
CONTAINMENT VENTILATION ISOLATION AUTOMATIC ACTUATION CIRCUITRY INOPERABLE

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(S)
0 8	1 0	9 4	9 4	- 0 0 5	- 0 0	0 9	0 1	9 4		0 5 0 0 0
									FACILITY NAME	0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR ?: (Check one or more of the following) (11)					
POWER LEVEL (10)	1 0 0	20.402(b)		20.405(c)		50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)		50.36(c)(1)	X	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)	X	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 (include area code)
Mehdi Sheibani, Nuclear Safety and Compliance	AREA CODE 7 0 6 8 2 6 - 3 2 0 9

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	R L Y	P 2 9 7	Y						

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 15 single-space typewritten lines) (16)

On August 5, 1994, a containment ventilation isolation (CVI) occurred. An investigation found that the radiation monitor involved, 1RE-2565, was displaying normal values, had no radiation alarms or trouble alarms, and the only change in the system had been to place a CVI block switch to "normal". Personnel concluded that the block switch was the source of the false CVI signal and the block switch was left in its "normal" position pending further investigation. On August 9, 1994, in order to facilitate the inputting of the new release permit parameters into 1RE-2565, and in conjunction with troubleshooting the cause of the CVI, SSPS leads were lifted and another CVI occurred. However, this time the block switch was not being manipulated. A follow-up investigation found that a failed relay inside of the radiation monitor had caused a CVI signal to be continuously sent from 1RE-2565 to the solid state protection system (SSPS) and resetting from the first CVI had simply blocked the CVI signal at the SSPS input. The failed relay was replaced. On August 10, 1994, it was determined that this condition would have prevented a valid automatic CVI signal from being processed by the SSPS in response to high radiation in the containment building.

This report is required because this represents a condition that alone could have prevented fulfillment of a safety function needed to control the release of radioactive material, when the radiation monitors' automatic actuation circuitry for CVI was inoperable. Additionally, this represented unit operation in a condition prohibited by the Technical Specifications.

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(v) because a condition existed that alone could have prevented fulfillment of a safety function needed to control the release of radioactive material, when radiation monitor automatic actuation circuitry for containment ventilation isolation (CVI) was inoperable. This report is also required per 10 CFR 50.73 (a)(2)(i) because this same condition represents unit operation in a condition prohibited by the Technical Specifications (TS).

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 1 was operating in Mode 1 (power operations) at 100 percent of rated thermal power. Containment area radiation monitor 1RE-0003 was out of service during the period of time involved. There was no other inoperable equipment that contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On August 5, 1994, personnel were restoring containment area radiation monitor 1RE-2565 to service following completion of a surveillance. Upon returning the CVI actuation block switch to the "normal" position at 0654 EDT, a CVI signal was processed through the solid state protection system (SSPS) and valves and dampers actuated as required to affect a CVI.

After verifying that no unusual radiological condition existed, the affected components were reset and an investigation begun. Since radiation monitor 1RE-2565 was displaying normal values, had no radiation alarms or trouble alarms, and the only change in the system had been to place the block switch to "normal", personnel logically concluded that the block switch was the source of the false CVI signal. The block switch was left in its "normal" position pending further investigation.

On August 9, 1994, in order to facilitate the inputting of the new release permit parameters into 1RE-2565, and in conjunction with troubleshooting the cause of the CVI, SSPS leads were lifted. As these Train A CVI actuation leads from 1RE-2565, located inside of the SSPS, were being lifted at 1031 EDT, a Train A CVI signal was processed and valves and dampers again actuated as required. Personnel verified that no unusual radiological condition existed and reset the affected components. An investigation found a failed relay inside of the radiation monitor's data processing module (DPM) that had caused a CVI signal to be continuously sent from 1RE-2565 to the SSPS. This had also caused a CVI signal to be locked-in at the SSPS. Although manual reset of CVI allowed equipment

to be returned to normal, the SSPS logic circuit blocked subsequent automatic CVIs due to high radiation. When leads from 1RE-2565 were lifted at the SSPS, a momentary break and remake of electrical contact had occurred. Breaking contact allowed the CVI signal inside of SSPS to be reset. Remaking the contact permitted a Train A CVI signal to pass through SSPS, allowing the appropriate valve and damper actuations to occur. The failed relay was replaced.

On August 10, 1994, at 1230 EDT, it was determined that the failed relay, in conjunction with the 1RE-2565 block switch being placed in "normal", would have prevented a valid automatic CVI signal from being successfully sent in response to high radiation in the containment building from either of the operable radiation monitors, 1RE-2565 or 1RE-0002. This represented a condition that alone could have prevented fulfillment of a safety function needed to control the release of radioactive material. The NRC Operations Center was notified of this condition at 1520 EDT. Furthermore, this represented operation of the unit in a condition prohibited by TS 3.3.2 since there is no action statement for the loss of automatic CVI actuation capability from all containment radiation monitors.

D. CAUSE OF EVENT

The cause of this event is the failure of a 1RE-2565 output relay. This relay failure led to the lockup of the SSPS reset function which would have prevented a valid CVI signal from being processed through SSPS. The failure was due to relay contacts which would not consistently pass an electrical signal. This was the apparent result of buildup on the contacts due to being continuously energized in a low-voltage condition for several years. It represents the first failure of its type in nearly ten years of operation.

Contributing to the occurrence of this event was the design of the SSPS reset/block circuitry concurrent with the initial belief that the block switch had malfunctioned and that there was no radiation monitor problem.

E. ANALYSIS OF EVENT

Although a high radiation condition in the containment would not have automatically actuated a CVI, the high radiation alarm would have prompted operators to initiate a manual CVI actuation. Additionally, the automatic CVI actuation function would still operate in the event of all other required automatic or manual signals except for the radiation monitors, i.e., safety injection, containment isolation phase A, or manual containment spray actuation. Finally, no event occurred

during the period of time involved which required a CVI. Based on these considerations, there was no adverse affect on plant safety or on the health and safety of the public as a result of this event.

F. CORRECTIVE ACTIONS

1) The failed relay was replaced, restoring to service the automatic CVI actuation function for high radiation.

2) An analysis to determine the root cause of the output relay failure is expected to be completed by November 30, 1994. This will be part of a general review of failures of low voltage relay contacts.

3) A broadness review will be completed by October 1, 1994, to evaluate the SSPS reset/block circuitry to determine the need for design changes or procedural controls to preclude similar problems in the future with inadvertent ESF signals. As an interim measure, procedures changes will be made by September 26, 1994, requiring that appropriate relays be checked to ensure a CVI signal is not present when resetting from a CVI.

G. ADDITIONAL INFORMATION

1) Failed Components:
24 volt AC output relay manufactured by Potter & Brumfield
Model # KHU17A12

2) Previous Similar Events:
None

3) Energy Industry Identification System Code:
Containment Ventilation System - JM
Safety Injection System - BQ
Containment Spray System - BE
Radiation Monitoring System - IL
Chemical and Volume Control System - CB
Solid State Protection System - JG