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May 29, 1990

the southern electric system

W. G. Hairston, III
Senior Vice President
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ELV-01700
0398

Docket No. 50-425

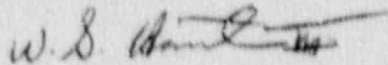
U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555

Gentlemen:

VOGTLE ELECTRIC GENERATING PLANT
LICENSEE EVENT REPORT
COMPUTER POINT FAILURE RESULTS IN EXCEEDING
THE REACTOR POWER LICENSE LIMIT

In accordance with 10 CFR 50.73, Georgia Power Company hereby submits the enclosed report related to an event which was discovered on April 29, 1990.

Sincerely,


W. G. Hairston, III

WGH,III/NJS/gm

Enclosure: LER 50-425/1990-005

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

U. S. Nuclear Regulatory Commission
Mr. S. D. Ebner, Regional Administrator
Mr. T. A. Reed, Licensing Project Manager, NRR
Mr. R. F. Aiello, Senior Resident Inspector, Vogtle

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) VOGTLE ELECTRIC GENERATING PLANT - UNIT 2										DOCKET NUMBER (2) 0 5 0 0 0 4 2 5 1 OF 0 4										PAGE (3) 1 OF 0 4	
TITLE (4) COMPUTER POINT FAILURE RESULTS IN EXCEEDING THE REACTOR POWER LICENSE LIMIT																					
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	4	27	90	090	005	0	5	29	90				0 5 0 0 0								
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																			
1		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)							
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)				73.71(e)							
1 0 0		20.405(a)(1)(ii)				50.36(e)(2)				50.73(a)(2)(vi)				X 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)				License Condition							
		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)(ix)											
LICENSEE CONTACT FOR THIS LER (12)												TELEPHONE NUMBER									
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 NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs							
X	I D	E C B D 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 4-29-90, at approximately 1530 CDT, Proteus computer point FO-424A (Steam Generator #2 feedwater flow) was discovered to be reading lower than control board indications. Since this computer point provides input to the computer calculated calorimetric power indication, FO-424A was promptly removed from the Proteus scan. This resulted in an increase of indicated reactor power to 3411 megawatts thermal (i.e., the maximum power level specified in the Facility Operating License). The power range nuclear instrumentation channels were then adjusted accordingly.

While removal of computer point FO-424A only brought indicated reactor power up to 100% rated thermal power (RTP), a subsequent review of computer data indicated that actual reactor power had slightly exceeded 100% RTP beginning at approximately 2000 CDT on 4-27-90. It is estimated that reactor power averaged 100.5% RTP for a 15 hour interval and a 25 hour interval until discovery of the computer point failure terminated the event.

A computer input card for FO-424A was replaced and the computer point was verified to be indicating correctly. Corrective action to prevent recurrence includes tightening the cluster limit for acceptance of the feedwater flow input values as good data.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) VEGP UNIT 2	DOCKET NUMBER (2) 05000425	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

A. REQUIREMENT FOR REPORT

This report is being submitted because the Vogtle Electric Generating Plant Unit 2 Facility Operating License No. NPF-81, section 2.H, requires Georgia Power Company to report violations of the requirements contained in section 2.C. License condition 2.C.(1) stipulates that the reactor core power level shall not exceed 3411 megawatts thermal. The failure of a computer point caused the average core thermal power level to slightly exceed 3411 megawatts thermal for greater than an eight hour shift. In accordance with a previously developed Georgia Power Company position (reference LER 50-424/1987-069-01), this event is considered reportable.

B. UNIT STATUS AT TIME OF EVENT

At the time of this event, Unit 2 was in Mode 1 (Power Operation) at 100% of 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 4-27-90, an intermittent failure of Proteus computer point FO-424A (Steam Generator #2 feedwater flow) began to occur. This failure increased in frequency and gradually resulted in FO-424A reading an average of 200 kilopounds/hour (KBH) less than computer point FO-423A (also Steam Generator #2 feedwater flow). Since these two computer points are averaged to provide an input value to the reactor thermal power computer point, U1118 (i. e., computer calculated calorimetric power), this intermittent failure resulted in feedwater flow being underestimated by an average of 100 KBH. This in turn caused the Proteus computer to underestimate reactor power by an average of 0.7%. Since reactor power is controlled based on the U1118 indication, this resulted in actual reactor power slightly exceeding 100% rated thermal power beginning at approximately 2000 CDT on 4-27-90.

On 4-29-90, at approximately 1530 CDT, the overpower condition was terminated when computer point FO-424A was discovered to be reading lower than control board indications. Computer point FO-424A was promptly removed from the Proteus scan which resulted in an increase of indicated reactor power to 3411 megawatts thermal. Procedure 14030-2, "Power Range Calorimetric Channel Calibration," was performed and the power range nuclear instrumentation channels (NI's) were adjusted accordingly. A manual calorimetric was also performed per procedure 14030-2 which validated the accuracy of the U1118 indication with the FO-424A input removed.

A subsequent review of computer data indicated that actual reactor power had reached a maximum of 100.6% of rated thermal power (3431 megawatts thermal) and had averaged approximately 100.5% for a 15 hour interval and a 25 hour interval during the overpower event.

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FACILITY NAME (1) VEGP - UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 4 2 5 9 0 - 0 0 5 - 0 0	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

D. CAUSE OF EVENT

The direct cause of this event was the intermittent failure of computer point FO-424A. Although the cause for this failure could not be positively identified, a computer input card for FO-424A was replaced and trending of that point indicated it to be operating correctly.

A contributing cause for this event is the cluster limit established for acceptance of the feedwater flow input values as good data. The present cluster limit will cause a feedwater flow value to be rejected when it differs from a predetermined value by more than 250 KBH. The value for FO-424A did fall outside of the cluster limit on several occasions; however, due to the intermittent nature of the failure, FO-424A was typically not rejected as an input and therefore impacted the Proteus calculated calorimetric.

E. ANALYSIS OF EVENT

The subsequent review of computer data demonstrated that none of the reactor trip limits were approached and the reactor safety limits shown in Technical Specification Figure 2.1-1 were not exceeded. Although the licensed power limit was slightly exceeded, this event did not result in the plant being in an unanalyzed condition. The plant was not operated above 102% of rated thermal power. Based on these considerations, there was no adverse effect on plant safety or public health and safety as a result of this event.

F. CORRECTIVE ACTIONS

1. The computer input card for FO-424A was replaced.
2. The cluster limit for acceptance of the feedwater flow input values to the Proteus calculated calorimetric will be made tighter. This modification is expected to be complete by 7-1-90.

G. ADDITIONAL INFORMATION

1. Failed Components Identification

FO-424A Computer Analog Input Card
Westinghouse QAW Card, located in Proteus Input/Output Cabinet.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) VEGP - UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 4 2 5	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 386A's) (17)

2. Previous Similar Events

A somewhat similar event occurred for Unit 2 on 6-15-89 (reference LER 50-425/1989-022) when a slight overpower condition was suspected to have occurred before discovery of a feedwater flow input error to the Proteus computer. However, the root cause for the feedwater flow input error in the prior event was different since it involved improper venting of sensing lines.

3. Energy Industry Identification System Codes

Reactor Core - AC

Feedwater - SJ

Plant Computer - ID