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May 1, 1990

the southern electric system

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

ELV-01569
0356

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
TRIP OF HEATER DRAIN PUMP RESULTS IN EXCEEDING THE
REACTOR POWER LICENSE LIMIT

In accordance with Section 2.H of Operating License NPF-81, Georgia Power Company hereby submits the enclosed report related to an event which occurred on April 1, 1990.

Sincerely,

W. G. Hairston, III

WGH,III/HWM/gm

Enclosure: LER 50-425/1990-003

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. Ebneter, Regional Administrator
Mr. T. A. Reed, Licensing Project Manager, NRR
Mr. R. F. Aiello, Senior Resident Inspector, Vogtle

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1/1

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)
TRIP OF HEATER DRAIN PUMP 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	0 1	9 0	9 0	0 0 3	0 0	0 5	0 1	9 0		0 5 0 0 0
										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)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	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)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	License Condition
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
R. M. ODOM, NUCLEAR SAFETY AND COMPLIANCE	AREA CODE 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	

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 4-1-90, at approximately 0725 CST, a power excursion resulted in Unit 2 exceeding the maximum power level (3411 megawatts thermal) specified in Operating License NPF-81, section 2.C.(1). The power excursion occurred when a condensate pump was started after a heater drain pump tripped on heater drain tank (HDT) low-low level. The pump start caused cooler feedwater flow to the steam generators. The corresponding cooldown of the primary system resulted in reactor power peaking at 105.2% of rated thermal power (3590 megawatts thermal). A subsequent review of data indicated that reactor power remained above 100% for approximately nine minutes.

An overpower rod block and an automatic turbine runback occurred as a result of the power excursion. Operators responded by manually inserting control rods, borating, and decreasing turbine load until reactor power was stabilized at 90%.

The low-low level in the HDT occurred following a HDT high level and subsequent isolation of inputs to the HDT. The high level occurred as a result of the high level dump valve failure to automatically open. The valve failed to open because a manual actuation pin for the valve was inappropriately inserted into the manual position.

Corrective action included disengaging the pin and maintaining reactor power at 90% until system alignments were returned to normal.

A. REQUIREMENT FOR REPORT

This report is being submitted because the Plant Vogtle 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. A power excursion resulted in operation in excess of the maximum power level of 3411 megawatts thermal, stipulated by license condition 2.C.(1).

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. Condensate demineralizer powdex vessel "B" was out of service for maintenance. Other than that described herein, there was no inoperable equipment which contributed to the occurrence of this event.

C. DESCRIPTION OF EVENT

On 4-1-90, at approximately 0650 CST, the condensate filter demineralizer system was bypassed to backwash and precoat the "A" powdex demineralizer vessel. Bypassing the condensate demineralizer system resulted in a slight rise in feedwater pump suction pressure and a corresponding reduction in flow from the heater drain pumps. Level in both heater drain tanks (HDT's) gradually rose and created a demand for the high level dump valves to open. HDT "B" high level dump valve opened properly to control level; however, the high level dump valve for HDT "A" did not open. The failure of the high level dump valve to open caused HDT "A" level to reach the high level setpoint which resulted in the isolation of inputs to HDT "A" and extraction steam to feedwater heater 4A. Isolation of the extraction steam completed the control logic which caused the normal level control valve for feedwater heater 5A to close. With this valve closed, essentially all flow to HDT "A" was isolated which resulted in a trip of heater drain pump "A" at 0725 CST on low-low level in the HDT.

As a result of the heater drain pump trip, the Control Room Balance of Plant Operator immediately started the standby condensate pump and began to decrease turbine load. The hot water from the heater drain tank was replaced by cooler water from the condensate system which resulted in a reduction in reactor coolant average temperature (Tavg). Due to the negative moderator temperature coefficient, an increase in reactor power occurred which resulted in an overpower rod block and an automatic turbine runback. The Reactor Operator manually reduced power by inserting control rods, which cleared the overpower rod block and turbine runback. The Operators then continued to manually insert control rods, borate, and decrease turbine load until reactor power was stabilized at 90% of rated thermal power. Heater drain pump "A" was then tagged out to allow performance of previously scheduled maintenance.

During the power excursion, which began on the trip of the heater drain pump, reactor power reached a maximum of 105.2% of rated thermal power (3590 megawatts thermal) as indicated by computer point U1118. A subsequent review of data obtained from the power range neutron flux monitoring nuclear instrumentation channels (NI's) indicated a maximum instantaneous peak of 102.4% of rated thermal power. According to the data taken from the NI's, the overpower event lasted for approximately nine minutes with an average power level of approximately 101% of rated thermal power.

D. CAUSE OF EVENT

The direct cause of this event was the failure of the high level dump valve for HDT "A" to open. The reason for this failure was that the manual actuation pin for this valve was inserted into the manual position, which rendered the valve incapable of automatic operation. This condition was not discovered until immediately prior to the trip of the heater drain pump and sufficient time was not available for operator action to correct this condition before the low-low level occurred in the HDT. It is not known when this pin was inserted into the manual position.

E. ANALYSIS OF EVENT

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

F. CORRECTIVE ACTIONS

1. Reactor power was maintained at 90% of rated thermal power until the previously scheduled maintenance on the heater drain pump was completed.

2. The manual actuation pin for the HDT high level dump valve was disengaged and the valve has been returned to automatic operation. These pins will be restrained in the automatic position by July 1, 1990.

3. Operators will be given additional training on cold water transients during the next requalification class scheduled for May 14, 1990 through June 15, 1990.

G. ADDITIONAL INFORMATION

1. Failed Components Identification

None

2. Previous Similar Events

None

3. Energy Industry Identification System Codes

Main Feedwater System - SJ

Reactor Core - AC