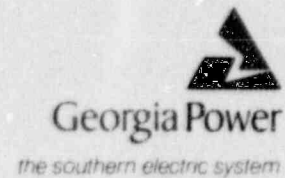


Georgia Power Company  
40 Inverness Center Parkway  
Post Office Box 1295  
Birmingham, Alabama 35201  
Telephone 205 877-7122

C. K. McCoy  
Vice President, Nuclear  
Vogtle Project



April 27, 1995

LCV-0532-C

Docket Nos. 50-424

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

Gentlemen:

**VOGTLE ELECTRIC GENERATING PLANT  
LICENSEE EVENT REPORT REVISION  
HEAT REMOVAL CAPABILITY VIA NATURAL CIRCULATION**

In accordance with 10 CFR 50.4 and 10 CFR 50.73, Georgia Power Company (GPC) submits the enclosed revision to LER 1-94-09.

Sincerely,

*C.K.M.'9*  
C. K. McCoy

CKM/HWM/gmb

Enclosure: LER 1-94-9, Revision 1

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

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

050046

9505050143 950427  
PDR ADDCK 05000424  
S PDR

*JE22*

EXPIRES: 5/31/95

## LICENSEE EVENT REPORT (LER)

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.

FACILITY NAME (1)

Vogtle Electric Generating Plant - Unit 1

DOCKET NUMBER (2)

5 0 0 0 4 2 4 1 OF 4

PAGE (3)

TITLE (4)

## DEGRADED STANDBY DECAY HEAT REMOVAL CAPABILITY VIA NATURAL CIRCULATION

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)												
1	1	2	9	9	4	9	4	-	0	0	9	-	0	1	0	4	2	7	9	5		
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 7: (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(c)(1) 50 73(a)(2)(iv) 73.71(c)																			
1 0 0			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)(vii)(A)																			
			20 405(a)(1)(iv) 50 73(a)(2)(ii) 50 73(a)(2)(vii)(B)																			
			20 405(a)(1)(v) 50 73(a)(2)(iii) 50 73(a)(2)(ix)																			

LICENSEE CONTACT FOR THIS LER (12)

NAME

Mehdi Sheibani, Nuclear Safety and Compliance

TELEPHONE NUMBER (include area code)

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

SUPPLEMENTAL REPORT EXPECTED (14)

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)

On September 11, 1994, Unit 1 entered a refueling outage. On September 16, 1994, the unit was in mode 5 (cold shutdown) with the reactor coolant system (RCS) being drained down for reactor vessel head disassembly. Residual heat removal (RHR) Train B was in service and RHR Train A had been administratively removed from service to allow limit switch adjustment and local valve stroking, but was intermittently in operation. During this period, steam generators (SGs) filled to greater than 17 percent were relied on to meet the Technical Specification (TS) requirement as the second source of decay heat removal.

On November 29, 1994, as a result of a self-assessment performed by the independent safety engineering group (ISEG), it was determined that, although all TS conditions were met, the ability to remove decay heat via the SGs may have been degraded during the period of time involved. On March 31, 1995, additional analysis showed that the "loops filled" conditions for operation should be applied to reactor coolant elevations greater than 194' instead of 192'. This determination meant that the unit had operated in a condition prohibited by TS during draindown from elevation 194' to 192'.

The cause of this event was a lack of understanding of the bases of the TS for the SGs to be an effective heat removing component in a loops filled condition and the lack of corresponding procedural guidance. As a result, the intent of the bases was not adequately provided to operators who took credit for the SGs as adequate for decay heat removal with the loops filled and pressurizer safeties removed. Guidance has been provided to operators to clearly indicate the conditions required to maintain the desired natural circulation configuration.

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 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.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Vogtle Electric Generating Plant - Unit 1

05000424

YEAR	SEQUENTIAL YEAR	REVISION NUMBER
94	-009	-01

2 OF 4

TEXT (if more space is required, use additional copies of NRC Form 366A)(17)

## A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(i)(B). Technical Specification (TS) 3.4.1.4.1 requires at least one train of residual heat removal (RHR) to be in operation while in Mode 5 (cold shutdown) with loops filled. Furthermore, it requires either an additional RHR train or two steam generators (SGs) with adequate inventory available for decay heat removal. On September 16, 1994, RHR Train A was declared inoperable while still operating, and continued to remove heat from the reactor core for most of the period of time involved. Although all TS conditions were being met, the redundant ability to remove decay heat via the SGs may have been degraded during the period of time the RCS was drained down and vented.

Additionally, this report is required because the unit operated under TS 3.4.1.4.1 (Loops Filled) instead of TS 3.4.1.4.2 (Loops Not Filled) during draindown from reactor coolant elevation 194' to elevation 192'. Therefore, the unit operated in a condition prohibited by TS 3.4.1.4.2 since both RHR trains were not operable and reactor makeup water storage tank (RMWST) discharge valves were not closed and secured.

## B. UNIT STATUS AT TIME OF EVENT

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

## C. DESCRIPTION OF EVENT

On September 11, 1994, Unit 1 entered a refueling outage. On September 16, 1994, the unit was in mode 5 (cold shutdown) with the reactor coolant system (RCS) being drained down in preparation for RX vessel head disassembly. The reactor coolant pumps were tagged out of service and RHR Train B was in service to provide decay heat removal. RHR Train A had been administratively declared inoperable due to maintenance/testing of the RCS-to-RHR suction valve 1HV-8701A, but was intermittently in operation and was actually removing decay heat from the reactor core. Guidance provided to operators defined the unit condition of RCS level greater than 192 ft. elevation as "loops filled," which allows the option of maintaining SGs instead of the second RHR train as a backup means for decay heat removal. Therefore, during this period of time, SGs filled to greater than 17 percent were relied on to meet the TS requirement as the second source of decay heat removal. At 0220 EST, the RCS was opened to the containment atmosphere when the pressurizer was vented via the removal of the code safety valves, and at 1628 EST, a conoseal on the reactor

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 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.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Vogtle Electric Generating Plant - Unit 1

05000424

YEAR	SEQUENTIAL YEAR	REVISION NUMBER
94	-009	-01

3	OF	4
---	----	---

TEXT (If more space is required, use additional copies of NRC Form 365A)(17)

vessel head was disassembled. At 2350 EST, RHR Train A was declared operable and the SGs were no longer relied upon for TS compliance.

On November 29, 1994, as a result of a self-assessment performed by the independent safety engineering group (ISEG), it was determined that, although all TS conditions were met, the ability to remove decay heat via the SGs may have been degraded during the period the RCS was drained down and vented. As a result of additional analysis, it was discovered on March 31, 1995, that "Loops Filled" should be defined as reactor coolant elevation greater than 194' rather than the previously defined 192'. On September 16, 1994, Unit 1 operated under TS 3.4.1.4.1 (Loops Filled) instead of TS 3.4.1.4.2 (Loops Not Filled) during draindown from reactor coolant elevation 194' to elevation 192'. Per the requirements of TS 3.4.1.4.2, both RHR trains were not operable and reactor makeup water storage tank (RMWST) discharge valves were not closed and secured during this draindown period. A review of the last Unit 2 refueling outage (2R4) found no instances of TS non-compliance due to RHR pump inoperability or RMWST discharge valves not being closed and secured during the corresponding times of opening the RCS.

## D. CAUSE OF EVENT

The cause of this event was a lack of understanding of the bases of the TS for using the SGs as a source for decay heat removal. For the SGs to be available as a heat removing component as specified in the TS basis, the RCS must actually be capable of being pressurized, in addition to being in a loops filled condition. The removal of the pressurizer safeties therefore caused the heat removal capability via natural circulation to be degraded, as only one train of RHR was operable. The plant conditions necessary to support the SGs as a heat removing component was not clearly understood nor included in plant procedures.

The cause of the failure to close and secure the RMWST discharge valves prior to reaching a reactor coolant elevation of 194' was attributed to an inaccurate definition of "Loops Filled."

## E. ANALYSIS OF EVENT

RHR Train B provided forced circulation to the core during the period of time involved and no event occurred that required a second source of cooling for the RCS. If such an event had occurred, RHR Train A was intermittently in operation for valve testing during the period of time involved and could have been promptly put into service, if needed. In fact, RHR Train A was removing decay heat from the core for most of the period of time involved. An engineering review based on conservative



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 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.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

Vogtle Electric Generating Plant - Unit 1

05000424 94 - 009 - 01 4 OF 4

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

assumptions determined that adequate natural circulation flow was questionable without the capability to pressurize the reactor coolant system (ie, RCS being vented) when relying on the SGs to provide decay heat removal. Natural circulation would occur, however, it could be at a reduced magnitude and quite possibly be repeatedly interrupted. Additionally, alarm and annunciation capability existed that would have warned the operators of a boron dilution event, thereby allowing them time to react and prevent a return to criticality. Based on these considerations, there was no adverse effect on plant safety or on the health and safety of the public as a result of this event.

## F. CORRECTIVE ACTIONS

Appropriate procedures were reviewed and revised to ensure the guidance provided to rely upon natural circulation is adequate for TS compliance in appropriate plant conditions. Additional procedures will be revised by May 30, 1995, to further address reliance upon natural circulation and to clarify requirements for closing and securing the RMWST discharge isolation valves prior to entering the "Loops Not Filled" condition. Also, licensed operator requalification training in January and February 1995, addressed the requirements for the use of SGs as a heat sink during natural circulation. The redefining of "Loops Filled" will be discussed in the licensed operator requalification training session which is scheduled to be completed by July 21, 1995.

## G. ADDITIONAL INFORMATION

## 1) Failed Components:

None

## 2) Previous Similar Events:

None

## 3) Energy Industry Identification System Code:

Reactor Coolant System - AB

Residual Heat Removal System - BP