Georgia Power Company
333 Piedmont Avenue
Atlanta, Georgia 30308
Telephone 404 526-3195

Mailing Address
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868-5581

the southern electric system

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

HL-984
000289

February 26, 1990

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

PLANT HATCH - UNIT 1
NRC DOCKET 50-321
OPERATING LICENSE DPR-57
LICENSEE EVENT REPORT
PERSONNEL ERROR CAUSES PROCEDURE DEFICIENCY
AND MISSED TECHNICAL SPECIFICATIONS SURVEILLANCE

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a missed Technical Specifications surveillance. This event involves Plant Hatch - Units 1 and 2.

Sincerely,

W. G. Hairston, III

SWR/ct

Enclosure: LER 50-321/1990-002

c: (See next page.)

IE22
1/1

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

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. P. Crocker, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. J. E. Menning, Senior Resident Inspector - Hatch

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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TITLE (4)
PERSONNEL ERROR CAUSES PROCEDURE DEFICIENCY & MISSED TECHNICAL SPECIFICATIONS SURVEILLANCE

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 1	3 1	9 0	9 0	0 0 2	0 0	0 2	2 6	9 0	Plant Hatch Unit 2	0 5 0 0 0 3 6 6
										0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

	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)		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
	AREA CODE
Steven B. Tipps, Manager Nuclear Safety and Compliance, Hatch	9 1 2 3 6 7 - 7 8 5 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 1/31/90, Unit 1 was in the Run mode at an approximate power level of 2430 MWt (approximately 99.7% of rated thermal power) and Unit 2 was in the Run mode at an approximate power level of 2436 MWt (approximately 100% of rated thermal power). At that time, a non-licensed employee discovered that a functional test of the Unit 2 Turbine Stop Valve (TSV, EIIS Code TA) position limit switches had not been satisfactorily performed by 12/22/89 prior to Unit 2 exceeding 30% power during its startup from a refueling outage. This test should have been performed in accordance with Unit 2 Technical Specifications tables 4.3.1-1 and 4.3.9.2.1-1 as part of the channel functional test of the Reactor Protection System (RPS, EIIS Code JC) and the End-of-Cycle Recirculation Pump Trip (EOC-RPT). This portion of the functional test was satisfactorily performed on 1/6/90.

The root cause of this event is personnel error. Specifically, the writer of a recent revision of procedure 34SV-C71-001-2S, "Turbine Stop Valve Instrument Functional Test," inserted a step and deleted a prerequisite such that when the TSVs are closed, the procedure can be completed without testing the TSV limit switches. This procedural error was found to apply to both units.

Corrective actions for this event included revising both the Unit 1 and Unit 2 procedures 34SV-C71-001-1S/2S, "Turbine Stop Valve Instrument Functional Test." Procedures 34GO-OPS-001-1S/2S, "Plant Startup," will also be revised to require satisfactory performance of 34SV-C71-001-1S/2S prior to ascending beyond 30% rated thermal power. These actions will be complete by 3/31/90.

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

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 1/31/90, Unit 1 was in the Run mode at an approximate power level of 2430 MWt (approximately 99.7% of rated thermal power) and Unit 2 was in the Run mode at an approximate power level of 2436 MWt (approximately 100% of rated thermal power). At that time, a non-licensed employee discovered that a functional test of the Unit 2 Turbine Stop Valve (TSV, EIIS Code TA) position limit switches had not been satisfactorily performed by 12/22/89 prior to Unit 2 exceeding 30% power during its startup from a refueling outage. This test should have been performed in accordance with Unit 2 Technical Specifications tables 4.3.1-1 and 4.3.9.2.1-1 as part of the channel functional test of the Reactor Protection System (RPS, EIIS Code JC) and the End-of-Cycle Recirculation Pump Trip (EOC-RPT). This portion of the functional test was satisfactorily performed on 1/6/90.

The root cause of this event is personnel error. Specifically, the writer of a recent revision of procedure 34SV-C71-001-2S, "Turbine Stop Valve Instrument Functional Test," inserted a step and deleted a prerequisite such that when the TSVs are closed, the procedure can be completed without testing the TSV limit switches. This procedural error was found to apply to both units.

Corrective actions for this event included revising both the Unit 1 and Unit 2 procedures 34SV-C71-001-1S/2S, "Turbine Stop Valve Instrument Functional Test." Procedures 34GO-OPS-001-1S/2S, "Plant Startup," will also be revised to require satisfactory performance of 34SV-C71-001-1S/2S prior to ascending beyond 30% rated thermal power. These actions will be complete by 3/31/90.

DESCRIPTION OF EVENT

On 1/31/90, a non-licensed employee was conducting a validation of the Plant's Commitment Tracking System Database. During this validation, he found that Unit 2 procedure 34SV-C71-001-2S, "Turbine Stop Valve Instrument Functional Test," allowed the user to not perform portions of the procedure when the TSVs are closed. The portion of the procedure which may be omitted tests the open and closed function of the TSV position limit switches. Thus, when the TSVs are closed, the testing of the TSV position limit switches is bypassed, and the channel functional test as defined by the Technical Specifications cannot be satisfactorily performed. The user is directed by procedure to resume testing the remaining logic in the system. Properly testing the TSV position limit switches would require observing them in the open and closed states and verifying that downstream logic has responded accordingly.

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

The Unit 2 procedure containing the procedural error was performed on 12/6/89 as Unit 2 was preparing to resume operation following a refueling outage. At that time the TSVs were closed, and the procedure data package shows that the TSV position limit switch steps were indeed bypassed. This resulted in the TSV position limit switch contacts in the logic for the RPS TSV closure scram and the EOC-RPT not being tested in accordance with the channel functional test requirements in Technical Specifications tables 4.3.1-1 and 4.3.9.2.1-1, respectively. Therefore, Unit 2 entered a condition prohibited by Technical Specifications at approximately 1400 CST on 12/22/89 when it exceeded 30% rated thermal power, the condition under which the requirements for the TSV position limit switches become applicable. Unit 2 remained in this condition until 2248 CST on 1/6/90 when the monthly surveillance procedure was routinely performed with the TSVs open, thereby satisfying the surveillance requirement for functional testing of the TSV position limit switches.

This procedure error was also found to exist in the corresponding Unit 1 procedure, 34SV-C71-001-1S, "Turbine Stop Valve Instrument Functional Test." However, during the last Unit 1 startup, the Unit 1 channel functional test was fully completed on 12/10/88 with the TSV's open, and it was performed prior to ascending beyond 30% rated thermal power. Therefore, the Technical Specifications surveillance requirement was satisfied for Unit 1.

CAUSE OF THE EVENT

The immediate cause of the missed Technical Specifications surveillance is an inadequate procedure. Specifically, procedure 34SV-C71-001-2S, "Turbine Stop Valve Instrument Functional Test," permitted users to forego the testing of TSV position limit switches required by Unit 2 Technical Specifications tables 4.3.1-1 and 4.3.9.2.1-1. The most recent revision of the procedure did not include a prerequisite that the TSVs must be open prior to performing the surveillance. It also included a step which permitted users to bypass the required testing of the TSV position limit switches when the TSVs are closed. Therefore, when the procedure was performed on 12/6/89, plant operations personnel, following the procedure as written, observed that the TSVs were closed and bypassed the testing of the TSV position limit switches. The same procedural deficiency was found to apply to Unit 1, wherein the TSV position limit switch functional test procedure potentially could have permitted users to omit testing required by Unit 1 Technical Specifications tables 4.1-1 and 4.2-9.

The root cause of the procedural deficiencies is personnel error. Specifically, the writer of the current revisions of the procedures deleted a prerequisite that the TSVs be open during testing, and he inserted a step which permits users to bypass the required testing of the TSV limit switches. Previous revisions of the same procedures required the TSVs to be open and contained no provision for bypassing TSV position limit switch testing. The writer who is responsible for the changes in the current procedure revision is no longer employed by Georgia Power Company, but the writer's former supervisor explained that the writer mistakenly believed that the testing of the TSV position limit switches was not necessary to fulfill the intent of the Technical Specifications channel functional test requirements.

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

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73 (a)(2)(i)(B) because Unit 2 entered a condition prohibited by the Technical Specifications. Specifically, TSV position limit switches were not correctly surveilled per the Unit 2 Technical Specifications tables 4.3.1-1 and 4.3.9.2.1-1 within 30 days prior to entering the operating condition under which they were required to be operable.

One function of the TSV position limit switches is to initiate an actuation of the RPS system in the event that at least 3 of the 4 TSVs are more than 10% closed. Closure of the TSVs with the reactor at power can result in a significant addition of positive reactivity to the core as the nuclear system pressure rise causes steam voids to collapse. The turbine stop valve closure scram initiates a scram earlier than does either the Neutron Monitoring System (NMS, EIIS Code IG) or nuclear system high pressure. It is required to provide a satisfactory margin below core thermal-hydraulic limits for this category of abnormal operational transients. The scram counteracts the addition of positive reactivity resulting from increasing pressure by inserting negative reactivity with control rods. Although the nuclear system high-pressure scram in conjunction with the pressure relief system is adequate to preclude overpressurizing the nuclear system, the turbine stop valve closure scram provides additional margin to the nuclear system pressure limit.

The second function of the TSV position limit switches is to provide a logic signal to the end-of-cycle recirculation pump trip (EOC-RPT) upon closure of the TSVs. The EOC-RPT is a part of RPS. The purpose of the EOC-RPT is to recover the loss of thermal margin which occurs at the end of the fuel cycle. The physical phenomenon involved is that the void reactivity feedback due to a pressurization transient can add positive reactivity to the reactor system faster than the control rods can add negative reactivity. The EOC-RPT system trips both reactor recirculation pumps (EIIS Code AD), reducing coolant flow in order to reduce the void collapse in the core during the two most limiting pressurization events. The two events for which the EOC-RPT protective feature is required are closure of the TSVs and fast closure of the turbine control valves.

The TSV position limit switches were functionally tested with the TSVs open on 1/6/90, and they functioned correctly at that time. Therefore, even though the TSV position limit switches were not surveilled in accordance with applicable Technical Specifications from 12/22/89 to 1/6/90, it can be concluded that their actual function was unimpaired by the surveillance deficiency.

Based on the above analysis, it is concluded that this event had no adverse impact on nuclear safety. This analysis is applicable to all power levels.

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

CORRECTIVE ACTIONS

Corrective actions for this event include revising both the Unit 1 and Unit 2 procedures 34SV-C71-001-1S/2S, "Turbine Stop Valve Instrument Functional Test." The revision will require testing of the TSV position limit switches prior to ascending beyond 30% rated thermal power. Procedures 34GO-OPS-001-1S/2S, "Plant Startup," will also be revised to require performance of 34SV-C71-001-1S/2S prior to exceeding 30% rated thermal power. These actions will be complete by 3/31/90. No disciplinary action will be initiated against the writer responsible for the procedure error because the individual is no longer employed by Georgia Power Company.

ADDITIONAL INFORMATION

1. No plant systems other than the TSV closure RPS logic and EOC-RPT logic were affected by this event.

2. Previous similar events in which personnel errors led to deficiencies in procedures required by Technical Specifications were reported in the following LERs:

   50-366/1989-006, dated 10/23/89
   50-321/1989-009, dated 09/21/89
   50-321/1989-005, dated 04/21/89
   50-366/1989-002, dated 03/14/89
   50-321/1988-019, dated 01/16/89

   Corrective actions resulting from the previous similar events included counseling of involved personnel, revisions to appropriate procedures, a review of plant procedures, a review of an amendment involved in a previous similar event, and a review of selected surveillance procedures to ensure compliance with Technical Specifications. These corrective actions would not have prevented this event since the procedures, amendment, and personnel were unique to those events.