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Georgia Power
the southern electric system

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Docket No. 50-366

HL-3269
005299

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

Edwin I. Hatch Nuclear Plant - Unit 2
Licensee Event Report
Personnel Error Results in a Condition
Prohibited by the Technical Specifications

Gentlemen:

In accordance with the provisions of 10 CFR 50.73(a)(2)(i), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a personnel error which resulted in a condition prohibited by the Technical Specifications. This event occurred at Plant Hatch - Unit 2.

Sincerely,

J. T. Beckham, Jr.

JKB/cr

Enclosure: LER 50-366/1993-003

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebneter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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NRC Form 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
PLANT E. I. HATCH, UNIT 2	0 5 0 0 0 3 6 6	1 OF 5

TITLE (4)
PERSONNEL ERROR RESULTS IN A CONDITION PROHIBITED BY THE TECHNICAL SPECIFICATIONS

EVENT DATE (5)			LER NUMBER (6)					REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR		SEQ NUM		REV	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
												0 5 0 0 0
0 4	0 7	9 3	9 3		0 0 3		0 0	0 5	0 3	9 3		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)			
POWER LEVEL	0 3 8	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)
		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	912	367-7851

COMPLETE ONE LINE FOR EACH FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORT TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORT TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES(If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (16)

On 04/07/93 at 0103 CDT, Unit 2 was in the Run mode at a power level of 938 CMWT (38.5% rated thermal power). At that time, licensed shift personnel were performing Control Rod Drive (CRD) system scram time testing in accordance with Unit 2 Technical Specifications section 4.1.3.2.a which requires the testing to be completed prior to exceeding 40% rated thermal power. Per procedure 34GO-OPS-001-2S, "PLANT STARTUP," reactor power was being maintained below 40% in order to comply with the specification. When licensed personnel prepared to test control rod 26-31, they expected that fully withdrawing the rod might cause thermal power to increase to a level very close to 40%. Therefore, they slowly withdrew the rod a few notches at a time while observing the Average Power Range Monitors. The monitors, which have strip chart indication, appeared to indicate approximately 40%. By the time the rod had been fully withdrawn, however, the plant's Process Computer indicated that thermal power had actually reached 40.71%, violating the requirement of the specification. Licensed personnel then scrammed the rod, and thermal power decreased to approximately 38.3%.

The root cause of this event is personnel error on the part of the licensed superintendent of shift. The plant startup procedure stated that the testing should normally be performed at 35% rated thermal power. However, the plant was operated at a higher power level (38.5%) with the result that when rod 26-31 was fully withdrawn, core thermal power increased to 40.71%.

Corrective actions for this event included counseling the licensed superintendent of shift. Also, the plant startup procedure will be revised by 7/16/93 to provide improved administrative control of reactor power.

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor
Energy Industry Identification System codes are indicated in the text as (EIIS Code XX).

DESCRIPTION OF EVENT

On 04/07/93 at approximately 0103 CDT, Unit 2 was in the Run mode at a power level of 938 CMWT (38.5% rated thermal power). At that time, licensed shift personnel were performing Control Rod Drive (CRD, EIIS Code AA) scram time testing per procedures 34GO-OPS-001-2S, "PLANT STARTUP," and 42SV-C11-001-2S, "CONTROL ROD SCRAM TESTING." These procedures implement the requirement to perform individual control rod scram time testing per Unit 2 Technical Specifications section 4.1.3.2.a. This specification requires that scram time testing on all control rods be completed prior to exceeding 40% of rated thermal power. Seven control rods had been tested successfully and operations personnel were preparing to test control rod 26-31.

Prior to rod 26-31 being tested, shift personnel recognized the rod as a high-worth rod. Accordingly, they withdrew the rod in stages (rather than continuously) while observing the Average Power Range Monitors (APRMs, EIIS Code IG) to ensure that core power did not exceed 40% as indicated by the APRM strip chart recorder. As the rod was withdrawn, core power increased as expected, but appeared on the APRM strip chart to remain at approximately 40%. By the time the rod was fully withdrawn, however, the plant's Process Computer (EIIS Code IO) indicated that thermal power had reached 40.71%. This represented a condition prohibited by the plant's Technical Specifications since core thermal power rose briefly above 40% before all control rod scram time testing was complete.

Upon discovering that the plant had exceeded 40% thermal power, licensed personnel completed the scram time test on control rod 26-31, and core thermal power decreased as expected to approximately 38.3% of rated. The Shift Technical Advisor then initiated a Deficiency Card to document the event in accordance with the plant's administrative control procedures. Subsequently, licensed personnel partially inserted one rod group to provide additional margin below 40%, and then successfully completed scram time testing on the rest of the control rods. The total time during which the plant operated above 40% was approximately two minutes.

CAUSE OF EVENT

The cause of this event was personnel error on the part of the licensed superintendent of shift. One of the procedures in use at the time, 34GO-OPS-001-2S, "PLANT STARTUP," contained a note to the effect that control rod drive scram time testing is normally to be performed when the plant is operating at approximately 35% of rated thermal power in order to avoid the

possibility of exceeding 40% during testing. However, the plant was operated at a higher power level (38.5%) with the result that the withdrawal of a high worth rod caused core thermal power to exceed 40%.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73 (a)(2)(i) because the plant entered a condition which was prohibited by the Technical Specifications. Specifically, prior to completion of all control rod scram time testing as required by Unit 2 Technical Specifications section 4.1.3.2.a, core thermal power exceeded 40% for a period of approximately two minutes.

The Control Rod Drive system provides control of reactivity through positioning of control rods. The system consists of 137 cruciform-shaped control rods and related hydraulic equipment to move them. The rods contain boron or hafnium based compounds which absorb neutrons and thus retard the nuclear chain reaction. When all the control rods are fully inserted into the reactor core, sufficient negative reactivity is present to shut down the reactor and maintain it in the shutdown condition under worst case combinations of moderator density and temperature. Each control rod is supplied with motive force by its own hydraulic control unit. The scram function of the CRD system normally causes rapid, full insertion of all control rods simultaneously; however, individual control rods may be scrammed one at a time for testing purposes. If the core has been altered or shut down for 120 days or more, the scram function of all rods is required to be tested prior to ascending to full power operation. The purpose of this testing is to ensure that the CRD system is capable of inserting all control rods within the time constraints assumed in the plant's Final Safety Analysis Report (FSAR). The method of test involves fully withdrawing each control rod one at a time, actuating its scram function, and measuring the time interval between the initiation signal and the completion of rod travel. This scram time test was in progress at the time of the event.

In this event, licensed shift personnel were operating the plant at a power level of 38.5% of rated while CRD scram time testing was being conducted. However, when rod 26-31, which is located near the center of the core, was fully withdrawn during testing, thermal power rose slightly above the 40% limit, remaining there for approximately two minutes. When licensed shift personnel observed Process Computer indications that thermal power had exceeded 40%, they scrammed rod 26-31, reducing core thermal power to below 40% of rated. Thus, the brief excursion above 40% rated thermal power occurred as a result of the scram time testing, not as a result of a normal ascension toward full power operation. The plant was in steady state operation below 40% power prior to the event and returned to operation below 40% power as the scram function on rod 26-31 was tested. The 40% limit does not form the basis for any assumption in the FSAR nor was it chosen to protect any safety limit. Therefore, the plant did not exceed or potentially exceed any safety limit as a result of this event. The operability of plant equipment was not affected by the event, and the ability of the CRD system to produce a scram was not compromised in any way as demonstrated by the fact that all control rods were successfully tested prior to

normal ascension to full power operation. Following the event, one rod group was partially inserted into the core, reducing reactor power slightly and providing additional margin between the operating regime and the 40% limit. Thus, there were no further power excursions above 40% of rated until all control rod scram time testing had been successfully completed.

Based on this analysis, it is concluded that this event had no adverse impact on nuclear safety. The analysis is applicable to all plant conditions.

CORRECTIVE ACTIONS

Corrective actions for this event included:

1. Counseling the licensed superintendent of shift. This action is complete.

2. Revising procedures 34GO-OPS-001-2S, 34GO-OPS-001-1S, 42SV-C11-001-1S, and 42SV-C11-001-2S to provide improved administrative control of reactor power during CRD scram time testing. This action will be completed by 07/16/93.

ADDITIONAL INFORMATION

1. Other Systems Affected: No plant systems other than the CRD system were affected by this event.

2. Failed Components Identification: No failed components contributed to or resulted from this event.

3. Previous Similar Events: Events reported in the past two years in which personnel error resulted in the plant entering a condition which is prohibited by the Technical Specifications are described in the following LERs:

50-321/1991-32, dated 01/27/92
50-321/1992-02, dated 02/06/92
50-321/1992-08, dated 04/20/92
50-321/1992-19, dated 08/04/92
50-366/1991-16, dated 06/28/91
50-366/1991-21, dated 12/04/91
50-366/1992-04, dated 04/30/92
50-366/1992-06, dated 06/22/92
50-366/1992-11, dated 08/14/92
50-366/1992-12, dated 08/25/92
50-366/1992-17, dated 10/21/92
50-366/1992-22, dated 12/07/92
50-366/1992-24, dated 12/14/92
50-366/1992-25, dated 12/21/92

TEXT

Corrective actions which addressed the personnel errors contributing to these events included counseling personnel, reviewing events with licensed personnel in Beginning of Shift Training (BOST), reviewing and revising procedures, issuing an Operations Departmental Directive on the purpose of daily instrument channel checks, training plant personnel on the use of self-verification techniques, removing a licensed individual from duty, carrying out formal discipline under the Company's Positive Discipline program, and performing management observation of personnel performance in the Main Control Room. Although the event described in this LER involved personnel error, these corrective actions would not have prevented this event because they pertain to the performance of different activities. Also, counseling or training personnel cannot completely eliminate oversights such as the one that caused this event.