Georgia Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 877-7279

J. T. Beckham, Jr.
Vice President—Nuclear
Hatch Project

Georgia Power
the southern electric system

HL-1904
002156

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

PLANT E. I. HATCH - UNIT 1
NRC DOCKET 50-321
OPERATING LICENSE DPR-57
LICENSEE EVENT REPORT
AREA RADIATION MONITORS TRIP RESULTING IN
ENGINEERED SAFETY FEATURE AUTOMATIC ACTUATION

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning the unanticipated actuation of an Engineered Safety Feature (ESF). This event occurred at Plant Hatch - Units 1 and 2.

Sincerely,

J. T. Beckham, Jr.

SNB/CLT/et

Enclosure: LER 50-321/1991-020

cc: (See next page.)

IE22 1/1

Georgia Power

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

700775

NRC Form 366 (6-89) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED OMB NO. 3150-0104 EXPIRES: 4/30/92

LICENSEE EVENT REPORT (LER)

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TITLE (4)
AREA RADIATION MONITORS TRIP RESULTING IN ENGINEERED SAFETY FEATURE AUTOMATIC ACTUATION

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)
									PLANT HATCH, UNIT 2	0 5 0 0 0 3 6 6
1 0	0 4	9 1	9 1	0 2 0	0 0	1 1	0 1	9 1		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)					
		20.402(b)	20.405(c)	X	50.73(a)(2)(iv)		73.71(b)
POWER LEVEL	0 0 0	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)	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 10/4/91 at 2342 CDT, Unit 1 was in a refueling outage with the mode switch in Refuel and the fuel in the reactor vessel. Unit 2 was in the Run mode at 2436 CMWT (100 percent rated thermal power). At that time various area high radiation annunciators alarmed in the Main Control Room and the unit-common Main Control Room Environmental Control System (MCRECS) automatically transferred to the pressurization mode. All 38 Area Radiation Monitor (ARM) trip units, located on Main Control Room panel 1D21-P600, had tripped; however, the trip unit indicators were reading within their normal ranges. Two of the ARMs located on the Refueling Floor provide initiation signals for automatic actuation of the MCRECS pressurization mode when their design setpoints are exceeded. Since the ARM trip unit indicators showed that radiation levels were normal, the trip units were reset. MCRECS was then returned to its normal mode of operation at approximately 2355 CDT.

The most probable cause of this event was concluded to be a voltage perturbation in the common power supply of the ARMs. However, a review of outage activities in progress at the time of the event did not reveal any activities that would have resulted in such a perturbation.

Corrective actions for the event included resetting the ARM trip units and returning MCRECS to its normal mode of operation.

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TEXT

PLANT AND SYSTEM IDENTIFICATION

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

DESCRIPTION OF EVENT

On 10/4/91 at 2342 CDT, Unit 1 was in a refueling outage with the mode switch in Refuel and no fuel in the reactor vessel. Unit 2 was in the Run mode at 2436 CMWT (100 percent rated thermal power). At that time various area high radiation annunciators alarmed in the Main Control Room (EIIS Code NA) and the unit-common Main Control Room Environmental Control System (MCRECS, EIIS Code VI) automatically transferred to the pressurization mode. Licensed operators, in response to the situation, immediately proceeded to the Area Radiation Monitor (ARM, EIIS Code IL) trip units located on Main Control Room panel 1D21-P600 and found all 38 units tripped as indicated by their trip status lights. However, the trip unit indicators were reading within their normal ranges.

The ARMs provide continuous monitoring of radiation levels in selected areas in the plant and provide annunciation in the Main Control Room when preselected setpoints are exceeded. Two ARMs located on the Refueling Floor additionally provide initiation signals for automatic actuation of the MCRECS pressurization mode.

Since the ARM trip unit indicators showed that radiation levels were normal, the trip units were reset. MCRECS was then returned to its normal mode of operation at approximately 2355 CDT. At 0058 CDT, on 10/5/91, a four-hour notification was made on the event in accordance with 10 CFR 50.72.

CAUSE OF EVENT

The most probable cause of the event was an intermittent voltage perturbation in the power supply to the ARMs. A review of the ARM system design showed that the only credible single anomaly that could have caused all of the ARMs to trip simultaneously is a momentary voltage drop or spike in their common power supply. The 38 ARMs are powered from the same essential power supply, Unit 1 Instrument bus "A" (EIIS Code EF).

A review of operating, maintenance, and design change activities in progress at the time of the event was performed. No electrical system line-ups were in progress at the time of the event. Several instrument surveillances were in progress. However, performance of these tests should not have caused such a voltage perturbation. Also, no abnormalities were reported to have occurred during performance of these tests. Special Purpose Procedure 42SP-090991-PH-1-1S, "Functional Test for DCR (Design Change Request) 87-114,"

was in progress at the time of the event. This procedure functionally tests the Station Service Battery Chargers which were replaced under the noted DCR. It was determined from review of the procedure and discussions with testing personnel that the functional test would not have caused such a perturbation. The review identified no other activities which would have caused a voltage perturbation in the ARMs common power supply. Therefore, no plausible cause could be determined for the voltage spike/drop.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This report is required in accordance with 10 CFR 50.73(a)(2)(iv) because an unplanned automatic actuation of an Engineered Safety Feature (ESF) occurred. Specifically, MCRECS automatically transferred to the pressurization mode on a spurious Refueling Floor ARM high radiation signal.

The ARM system provides information to plant personnel concerning radiation levels at selected locations within the plant where radioactive material may be stored, handled, or inadvertently introduced. The ARMs provide local indication as well as indication in the Main Control Room. Selected ARMs also alarm locally when radiation levels in that area exceed preselected setpoints, and, in the case of two of the Refueling Floor ARMs, provide a trip input to an ESF actuation logic system (i.e., the pressurization mode of MCRECS).

MCRECS is designed to ensure habitability of the Main Control Room following a Loss of Coolant Accident, a Fuel Handling Accident, a Main Steam Line Break Accident, or a Control Rod Drop Accident. Specifically, MCRECS enters the pressurization mode of operation in response to a Loss of Coolant Accident signal from Unit 1 or 2, a Refueling Floor high radiation signal from Unit 1 or 2, a Main Steam Line high flow signal from Unit 1 or 2, a Main Steam Line high radiation signal from Unit 1 or 2, or a Main Control Room air intake high radiation signal. The pressurization mode functions to pressurize the Main Control Room using radiologically clean air thereby preventing inleakage of gaseous radioactive material and keeping doses to Main Control Room personnel to within 10 CFR 50, Appendix A limits.

In the fuel handling design basis accident, a fuel bundle is dropped onto the core resulting in fuel rod damage and releases of radioactive gases into the Refueling Floor atmosphere. The results of this design basis accident analysis indicate radiation fields sufficient to warrant the trip of selected ARMs and the resultant actuation of the MCRECS pressurization mode. The Refueling Floor ARM trip anticipates the trip resulting from the Main Control Room air intake radiation monitors. As such, it provides additional protection over that provided by the air intake high radiation trip.

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TEXT

In this event, the ARMs tripped initiating various high radiation annunciators and a transfer of MCRECS to the pressurization mode per design. No other actuations resulted from the event. The trips most probably resulted from a voltage perturbation in the power supply to the ARMs. Indications on the ARM trip units showed that radiation levels in the monitored areas were normal. Had an actual design basis event occurred requiring the MCREC system to be in the pressurization mode, the system would have performed its design safety function.

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

CORRECTIVE ACTIONS

By approximately 2355 CDT, on 10/4/91, the ARM trip units had been reset and the MCRECS had been returned to its normal mode of operation.

ADDITIONAL INFORMATION

No systems other than MCRECS and the ARM system were affected by this event.

No similar events have occurred in the previous two years in which a voltage perturbation caused an ESF actuation.

No failed components contributed to this event.