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Georgia Power

The Southern Electric System

HL-2910  
003982

September 15, 1992

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

PLANT HATCH - UNIT 2  
NRC DOCKET 50-366  
OPERATING LICENSE NPF-5  
LICENSEE EVENT REPORT  
PERSONNEL ERROR RESULTS IN MISPOSITIONED VALVE  
AND ENGINEERED SAFETY FEATURE 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 a personnel error which resulted in an Engineered Safety Feature Actuation. This event occurred at Plant Hatch - Unit 2.

Sincerely,

J. T. Beckham, Jr.

JTB/cr

Enclosure: LER 50-366/1992-014

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. Ebnetter, Regional Administrator  
Mr. L. D. Wert, Senior Resident Inspector - Hatch

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**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1) <b>PLANT HATCH UNIT 2</b>	DOCKET NUMBER (2) <b>05000366</b>	PAGE (3) 1 of 5
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TITLE (4)  
**PERSONNEL ERROR RESULTS IN MISPOSITIONED VALVE AND ENGINEERED SAFETY FEATURE 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)
08	18	92	92	014	00	09	15	92		05000
										05000

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)									
POWER LEVEL 076	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)					
	20.405(a)(1)(i)	50.36(a)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)					
	20.405(a)(1)(ii)	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vi)	OTHER (Specify in Abstract below)					
	20.405(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)						
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)						
	20.405(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(ix)						

LICENSEE CONTACT FOR THIS LER (12)

NAME <b>Steven B. Tipps, Manager Nuclear Safety and Compliance, Hatch</b>	TELEPHONE NUMBER 912 367-7851
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COMPLETE ONE LINE FOR EACH FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRPDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (16)

On 08/18/92 at 1758 CDT, Unit 2 was in the Run mode at a power level of 1850 CMWT (76 percent rated thermal power) in the end-of-cycle coastdown. At that time, a non-licensed plant equipment operator was performing a backwash and precoat operation on the 'B' Reactor Water Cleanup (RWCU) system filter/demineralizer (F/D). After appropriate preparations per the system operating procedure had been made, the operator initiated the backwash and precoat cycle. Subsequently, licensed personnel in the Main Control Room received intermittent indication that the RWCU system Leak Detection System (LDS) was sensing a high RWCU system differential flow. The LDS annunciator alarmed and cleared twice, then remained alarmed. After the designed 45-second time delay, Group 5 Primary Containment Isolation System (PCIS) valves 2G31-F001 and 2G31-F004 isolated per design. The RWCU system remained out of service until the cause of the isolation could be determined. The cause of the event was a personnel error which resulted in a mispositioned valve. The F/D isolation valves are equipped with small-bore manual bypass valves, 2G31-F238A/B, which are used to slowly repressurize the F/D following a backwash and precoat operation. Following the isolation, the 'B' bypass valve was found partially open when it should have been fully closed. Apparently, the valve had been left partially open after a previous backwash and precoat of this F/D. With this valve open, initiating the backwash and precoat operation created a vent path from the RWCU system piping to the plant's liquid radioactive waste system. This was sensed as a leak by the LDS and resulted in a Group 5 PCIS isolation. The RWCU system operating procedure was revised and the event will be discussed with operations personnel in Beginning of Shift Training.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQ NUM	REV		
PLANT HATCH UNIT 2	05000366	92	014	00	2	OF 5

TEXT

PLANT AND SYSTEM IDENTIFICATION

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

DESCRIPTION OF EVENT

On 08/18/92 at 1758 CDT, Unit 2 was in the Run mode at a power level of 1850 CMWT (approximately 76 percent rated thermal power) in the end-of-cycle coastdown. At that time, a non-licensed plant equipment operator (PEO) was performing a backwash and precoat operation on the 'B' Reactor Water Cleanup (RWCU, EIIIS Code CE) system filter/demineralizer (F/D) per procedure 34SO-G31-003-2S, "RWCU System." The procedure requires preparations including removal of the F/D from service. Upon completion of these preparations, the PEO initiated the automatic backwash and precoat cycle. This cycle lasts for several minutes. While the cycle was underway, licensed personnel in the Main Control Room received an intermittent alarm indicating that the RWCU Leak Detection System (LDS, EIIIS Code IJ) was sensing a high differential flow between the RWCU system inlet and outlet lines. The LDS annunciator alarmed and cleared twice and then remained alarmed. Licensed personnel then observed a differential flow indication of 80 to 90 gpm. Following the designed 45-second time delay, Group 5 Primary Containment Isolation System (PCIS, EIIIS Code JM) valves 2G31-F001 and 2G31-F004 closed, resulting in a trip of the operating RWCU system pump, 2G31-C001B.

Following the isolation, the RWCU system remained out of service and the main F/D isolation valves were closed while an investigation into the cause of the trip was pursued. When the RWCU system is shut down, it receives a small amount of influent from the Control Rod Drive (CRD, EIIIS Code AA) system through the seal purge flow of one of the RWCU system pumps. In this configuration, the RWCU system piping should have remained pressurized because it was exposed to reactor coolant system pressure, but the F/D pressure should have been near atmospheric because it had been previously vented to the liquid radioactive waste system when the backwash and precoat cycle was initiated. However, a pressure indicator on the 'B' F/D read almost 1,000 psig, or approximately equal to the reactor coolant system pressure. Therefore, it was concluded that one or more F/D isolation valves were either leaking or mispositioned, thereby permitting RWCU system pressure to enter the F/D. Subsequently, an inspection of RWCU system valves was performed. This inspection revealed that valve 2G31-F238B was approximately 50 - 75 percent open when it should have been closed. This valve is located in a 3/4-inch line whose function is to provide a temporary, manual bypass around the main isolation valves for F/D 'B'. This manual bypass is used to slowly repressurize the F/D following a backwash and precoat operation. The valve is required to be closed at all times unless the F/D is being placed in service.

When the valve was reclosed, the RWCU system was placed in service without further incident by 1658 CDT on 08/20/92.

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQ NUM	REV		
PLANT HATCH UNIT 2	05000366	92	014	00	3	OF 5

TEXT

CAUSE OF EVENT

The cause of this event was a personnel error which resulted in a mispositioned valve. Following the isolation, valve 2G31-F238B was found partially open; it should have been fully closed. When the automatic backwash and precoat cycle was initiated, vent valves automatically opened as designed venting the F/D to the plant's liquid radioactive waste system. When this occurred with valve 2G31-F238B partially open, a flow path was created from the RWCU system piping through the F/D into the liquid radioactive waste system. This effluent from the RWCU system was sensed by the LDS as a high differential flow between the RWCU system inlet and outlet lines. This satisfied the Group 5 PCIS isolation logic conditions for a sensed leak. Following the designed 45-second time delay, the isolation logic actuated, resulting in the PCIS valves closing.

It appears probable that valve 2G31-F238B had been left partially open following a previous backwash and precoat cycle performed on 08/02/92. No other activity occurred between 08/02/92 and 08/18/92 which involved manipulation of valve 2G31-F238B. The RWCU system and the affected F/D would not have experienced any operational difficulties as a result of this mispositioned valve because it is located in a line parallel to a normally open valve in the main process. Leaving this valve open would affect the system only during evolutions which require the 'B' F/D to be isolated, such as during a backwash and precoat operation.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73(a)(2)(iv) because an unplanned automatic actuation of an Engineered Safety Feature (ESF) occurred. Specifically, Group 5 PCIS valves 2G31-F001 and 2G31-F004 automatically closed in response to a sensed condition of high differential flow between the RWCU system inlet and outlet lines.

The purpose of the Group 5 PCIS is to isolate the line leading from the Primary Containment to the Reactor Water Cleanup system when certain process conditions are sensed. These conditions include:

1. High ambient temperature in the RWCU heat exchanger room,
2. High differential temperature in the ventilation system ducts entering and leaving the RWCU heat exchanger room,
3. Low water level (Level 2) in the Reactor Pressure Vessel,
4. High differential flow between the RWCU system inlet and outlet lines,
5. Initiation of the Standby Liquid Control (SLC, EIS Code BR) system, and
6. High process fluid temperature downstream of the RWCU non-regenerative heat exchanger.

**LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION**

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)			PAGE (3)	
		YEAR	EQ NUM	REV		
PLANT HATCH UNIT 2	05000366	92	014	00	4	OF 5

TEXT

The isolation logic for the first four conditions comprises the RWCU Leak Detection System. The purpose of the RWCU Leak Detection System is to monitor the listed process and ambient conditions in order to detect leakage from the RWCU system. If leakage is detected, the system automatically sends a trip signal to the isolation logic for the Group 5 PCIS valves. In the case of the LDS trip on high differential flow, the trip logic sums the flows into and out of the RWCU system. If the sum exceeds the set point, a 45-second time delay is initiated. The time delay prevents unnecessary trips from occurring during normal system transients which can perturb the flow instruments. If the differential flow condition persists for 45 seconds or more, the trip on high differential flow will occur, resulting in closure of the Group 5 PCIS valves.

In this event, a mispositioned valve provided a flow path from the RWCU system piping through the open F/D vent valves into the plant's liquid radioactive waste system. This flow path existed only during the backwash and precoat of the 'B' F/D because the F/D vent valves are open only during the backwash and precoat operation, and they automatically close afterward. When the vent valves opened, the LDS sensed the flow out of the RWCU system and responded per design by initiating a Group 5 PCIS isolation. If a design basis accident had occurred during this event the partially open valve would have had no effect on the ability of the Group 5 PCIS valves to close.

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

CORRECTIVE ACTIONS

Corrective actions for this event include:

1. Discussing this event with plant operations personnel in Beginning of Shift training, emphasizing the crucial importance of proper equipment manipulation and verbatim compliance with plant procedures. This action will be completed by 9/30/92.
2. Revising, temporarily, procedure 3480-G31-003-2S to require valves 2G31-P338A/B to be verified closed prior to initiating a backwash and precoat operation on the F/Ds. The corresponding Unit 1 procedure has also been revised in this manner. These actions are complete. The temporary revisions will be permanently incorporated into the procedures by 11/25/92.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

FACILITY NAME (1)  PLANT HATCH UNIT 2	DOCKET NUMBER (2)  05000366	LER NUMBER (5)			PAGE (3)	
		YEAR	SEQ NUM	REV		
		92	014	00	5	OF 5

TEXT

ADDITIONAL INFORMATION

1. Other Systems Affected: No systems were affected other than those mentioned in this report.
2. Previous Similar Events: Events occurring in the past two years in which a mispositioned valve, switch or breaker resulted in a reportable condition are described in the following LERs:

50-321/1991-018, dated 10/14/91,  
50-321/1992-009, dated 04/23/92,  
50-321/1992-011, dated 05/29/92,  
50-366/1990-011, dated 11/29/90,  
50-366/1992-009, dated 07/24/92.

Corrective actions for these events included counseling involved personnel and revising procedures. These actions would not have prevented this event because they involved different personnel, procedures and systems.

An additional corrective action related to automatic isolation of the RWCU system, most likely, would not have prevented this event. The corrective action, namely, a revision to the Technical Specifications, would permit the differential flow isolation signal to be temporarily bypassed when maintenance, surveillance, or testing on the RWCU system is performed. The revision request was approved by the NRC on 5/9/92. The approved revision has not yet been implemented into plant procedures. However, the differential flow isolation signal probably would not have been temporarily bypassed during the evolutions described in this LER as changes in flow would not have been expected.

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