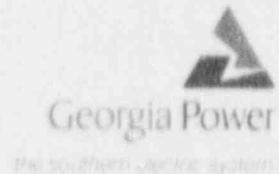


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Vice President—Nuclear  
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HL-2340  
003785

July 30, 1992

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  
SPURIOUS INSTRUMENT TRIPS RESULT IN ACTUATIONS  
OF GROUP 5 PRIMARY CONTAINMENT ISOLATION SYSTEM

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 spurious instrument trips which resulted in actuations of the Group 5 primary containment isolation system. This event occurred at Plant Hatch - Unit 1.

Should you have any questions in this regard, please contact this office.

Sincerely,

J. T. Beckham, Jr.

JKB/cr

Enclosure: LER 50-321/1992-018

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

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*Handwritten initials/signature*

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) PLANT HATCH, UNIT 1 DOCKET NUMBER (2) 05000321 PAGE (3) 1 OF 5

TITLE (4) SPURIOUS INSTRUMENT TRIPS RESULT IN ACTUATIONS OF GROUP 5 PRIMARY CONTAINMENT ISOLATION SYSTEM

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)
07	04	92	92	018	00	07	30	92			05000
											05000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)

OPERATING MODE (9)	1	20.402(b)	20.405(c)	X	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL	100	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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
STEVEN B. TIPPS, MANAGER NUCLEAR SAFETY AND COMPLIANCE, HATCH	912 367-7851
AREA CODE	

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (if yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (16)

On 07/04/92 at 1300 CDT, Unit 1 was in the Run mode at a power level of 2436 CMWT (100% rated thermal power). At that time, the outboard Group 5 Primary Containment Isolation System (PCIS) valve, 1G31-F004, automatically closed on a reactor water cleanup (RWCU) system high non-regenerative heat exchanger fluid temperature isolation signal. The isolation resulted in a trip of the operating RWCU system pump, 1G31-C001A, per design. Licensed personnel investigating the isolation determined that temperature switch, 1G31-N008, which monitors the RWCU fluid temperature downstream of the non-regenerative heat exchanger, was deenergized which caused the trip signal. Instrument and Control technicians subsequently examined the switch but found it energized. Later, they found the switch deenergized again, which meant that another trip signal had been generated. As they were inspecting the power supply wiring to this switch, it energized again. However, no further actuations could be induced via testing. No problems were identified in the logic which controls valve 1G31-F004. The trip contacts of switch 1G31-N008 were bypassed and monitoring instrumentation was installed so that any subsequent disturbances in the logic system could be recorded and analyzed.

The cause of these events could not be conclusively determined. It is believed the trips were spurious in nature.

Corrective actions for these events included bypassing the trip contacts on 1G31-N008, and temporarily installing monitoring equipment on the power supply and switch contacts of 1G31-N008. Pending identification of the cause of the isolation signal, additional corrective actions will be implemented as necessary.

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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 07/04/92 at 1300 CDT, Unit 1 was in the Run mode at a power level of 2436 CMWT (100% rated thermal power). At that time the outboard Group 5 Primary Containment Isolation System (PCIS, EIIIS Code JM) valve, 1G31-F004, automatically closed on a reactor water cleanup (RWCU, EIIIS Code CI) system high non-regenerative heat exchanger fluid temperature isolation signal. This resulted in an isolation of the RWCU system and a trip of the operating RWCU system pump, 1G31-C001A. No annunciators were received in the Main Control Room which indicated the source of the isolation signal. However, licensed shift personnel were aware of a previous event (reported in LER 50-321/1992-015, dated 07/10/92) in which the same valve had automatically isolated in the absence of annunciation. That event was caused by a failure of temperature indicating switch 1G31-N008, which is located downstream of the RWCU system non-regenerative heat exchangers. The switch provides a non-safety related isolation of the RWCU system on high temperature fluid leaving the non-regenerative heat exchanger to protect the ion exchange resins from an over temperature condition. The licensed superintendent of shift went to panel 1H21-P002 to inspect this switch. He found the switch deenergized with the indicator reading downscale and the power indicating light off, indicating a possible interruption in the power supply for the temperature switch. Deficiency Card 1-92-2910 was written to document this condition and to initiate corrective action by Instrument and Control technicians.

Before the Instrument and Control technicians began troubleshooting the system, they were informed by the licensed shift supervisor that operators had successfully reset the trip and reopened PCIS valve 1G31-F004. However, to preclude another automatic isolation, the operators had reclosed the valve. Therefore, the technicians proceeded to panel 1H21-P002 and found that the temperature switch was energized and was indicating a temperature consistent with system conditions. They returned to the Main Control Room and reported this to the superintendent of shift. The superintendent of shift verified this fact, and then requested electricians to inspect the power supply wiring leading to the switch.

When the electricians and technicians returned to the switch, they again found it deenergized and tripped. This meant that a second actuation signal had been sent through the isolation logic for 1G31-F004. Since the valve had already been closed, however, no automatic system response occurred. As troubleshooting activities were about to begin, the switch came on and began indicating a normal system temperature. Electricians and technicians were not able to duplicate any further interruptions of service via testing. Since switch 1G31-N008 is not part of the safety-related RWCU isolation logic and is intended to provide an equipment protection isolation, technicians temporarily installed a jumper,

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bypassing the trip contacts on this instrument per procedure 57CP-CAL-065-1S, "FENWAL TYPE 550/551/561 INDICATING TEMPERATURE CONTROLLER," to prevent further unnecessary isolations of the RWCU system. The RWCU system was then placed in service by 1845 CDT.

On 07/05/92, technicians performed a calibration on the temperature controller per the same procedure and found the instrument to be correctly calibrated and functioning normally. Since no problems had been identified with the switch, and since the power supply to the switch was regarded as a potential cause of the trips, the instrument was reinstalled and placed in service, but the jumper was left in place to prevent further spurious actuations. Monitoring equipment was temporarily installed on 1G31-N008 to monitor the status of the power supply to the instrument as well as the state of its trip contacts.

On 07/06/92 at 1927 CDT, no further spurious isolation signals had been generated to allow for additional investigations into the cause of the signals. At that time, Temporary Electrical Modification 1-92-055 was initiated to provide a method for administratively tracking the jumper. No further actuations have occurred since the monitoring equipment was installed.

CAUSE OF EVENT

The cause of these events could not be conclusively determined, but is believed to be spurious actuations or power supply interruptions affecting temperature switch 1G31-N008. The first time the temperature switch contacts spuriously opened, the Group 5 PCIS isolation and subsequent RWCU system pump trip occurred as designed. The second time the instrument tripped, the RWCU system was already isolated by closure of the outboard Group 5 PCIS valve and the pump was already tripped. Therefore, no valve movement or other automatic action occurred as a result of the trip.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73(a)(2)(iv) because two unplanned automatic actuations of an Engineered Safety Feature (ESF) occurred. Specifically, Group 5 PCIS valve 1G31-F004 closed in response to a spurious trip in the instrument which monitors process fluid temperature downstream of the RWCU system non-regenerative heat exchanger. While troubleshooting of this event was underway, temperature switch 1G31-N008 tripped again, resulting in an isolation signal being sent to the logic for PCIS valve 1G31-F004. However, in the latter event, the valve was already closed and therefore did not move as a result of the signal.

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 high ambient temperature in the RWCU heat exchanger room, high differential temperature in the ventilation system ducts entering and leaving the RWCU heat exchanger room, Water Level 2 in the Reactor Pressure Vessel, high differential flow in the lines entering and leaving

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containment, initiation of the Standby Liquid Control (SLC, EIIS Code BR) system, and high process fluid temperature downstream of the RWCU non-regenerative heat exchanger. The latter two conditions do not affect the inboard Group 5 PCIS valve, 1G31-F001, and are designed to close only the outboard PCIS valve, 1G31-F004.

The purpose of the Group 5 PCIS isolation on high temperature downstream of the non-regenerative heat exchanger is to prevent hot reactor water from damaging the resin in the RWCU system filter demineralizers, which could result in intrusion of the resin into the reactor coolant system. Corrective actions for this event included the installation of a jumper which bypasses the contacts which provide the trip on high temperature downstream of the non-regenerative heat exchanger. This trip is not a safety related function of the RWCU system or the Group 5 Primary Containment Isolation System. The jumper has no effect on the other Group 5 PCIS trips, all of which are safety related.

In the events addressed in this report, spurious actuations of temperature switch 1G31-N008 resulted in the isolation logic for PCIS valve 1G31-F004 twice receiving a trip signal indicating high process fluid temperature downstream of the non-regenerative heat exchanger. The same logic signal results when power is lost to the sensing instrument or temperature switch. In the first event, the valve was open and the RWCU system was in operation. Consequently, the valve closed and RWCU system pump tripped as designed. In the second event, the RWCU system was not in service and the PCIS valve had already been closed. Therefore, no automatic actions occurred as a result of the trip other than the propagation of the isolation signal through the logic. No other systems were affected by the two spurious actuations. In both cases, the system fulfilled its design function either by isolating or by remaining isolated when the appropriate logic signal was present. If a design basis accident had occurred during either of these events, the isolated state of the outboard PCIS valve would have had no effect on the capability of the inboard valve to close and, in fact, the penetration would have already been isolated. Unaffected portions of the system would have responded per design and completed the isolation with both Group 5 PCIS valves.

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 included the following:

1. Functionally testing and calibrating temperature switch 1G31-N008. This action is complete, and no problems were identified with the switch.
2. Bypassing the trip contacts on temperature switch 1G31-N008 and returning the RWCU system to service. This action is complete.

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- Installing monitoring equipment on the power supply and trip contacts of switch 1G31-N008. This monitoring equipment will remain in place as long as is deemed necessary. Should another activation of this switch occur, this equipment will enhance diagnostic work on the system, facilitating further corrective actions as necessary.

ADDITIONAL INFORMATION

- Other systems Affected: No systems were affected other than those mentioned in this report.
- Previous Similar Events: Events reported in the past two years in which spurious instrument activations resulted in ESF activations were described in the following LERs:

- 50-321/1991-020, dated 11/01/91,
- 50-321/1991-030, dated 12/23/91,
- 50-321/1992-005, dated 03/18/92,
- 50-321/1992-012, dated 06/11/92,
- 50-366/1991-013, dated 06/03/91,
- 50-366/1991-020, dated 12/02/91.

Corrective actions for these events included functionally testing and calibrating equipment, load testing the Reactor Protection System (RPS, EIIIS Code JC) power supply, temporarily installing power monitoring equipment in the RPS power supply, adjusting the output voltage of the RPS voltage regulator, and performing an engineering review of a circuit breaker application. These actions could not have prevented this event because they were not intended to prevent unrelated spurious instrument activations.

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