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HL-1665  
001733

June 3, 1991

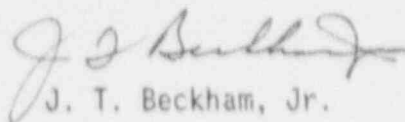
U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

PLANT HATCH - UNIT 2  
NRC DOCKET 50-366  
OPERATING LICENSE NPF-5  
LICENSEE EVENT REPORT  
SPURIOUS ELECTRICAL SPIKING IN NEUTRON  
MONITORING SYSTEM RESULTS IN UNPLANNED  
ACTUATION OF ENGINEERED SAFETY FEATURE

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 electrical spiking in the Neutron Monitoring System which resulted in an unplanned actuation of an engineered safety feature. This event occurred at Plant Hatch - Unit 2.

Sincerely,

  
J. T. Beckham, Jr.

OCV/cr

Enclosure: LER 50-366/1991-013

cc: (See next page.)

FE22  
11

U.S. Nuclear Regulatory Commission

June 3, 1991

Page Two

cc: Georgia Power Company

Mr. H. L. Sumner, General Manager - Nuclear Plant

Mr. J. D. Heidt, Manager Engineering and Licensing - Hatch  
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

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) PLANT HATCH, UNIT 2										DOCKET NUMBER (2) 05000366				PAGE (3) 1 OF 3		
TITLE (4) SPURIOUS ELECTRICAL SPIKING IN NEUTRON MONITORING SYSTEM RESULTS IN REACTOR PROTECTION SYSTEM 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)			
05	06	91	91	013	00	06	03	91					05000			
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR (11)													
5			20.402(b)				20.405(c)				X 50.73(a)(2)(iv)				73.71(b)	
POWER LEVEL			000				20.405(a)(1)(i)				50.73(a)(2)(v)				73.71(c)	
			20.405(a)(1)(ii)				50.73(a)(2)(vi)				50.73(a)(2)(vii)				OTHER (Specify in	
			20.405(a)(1)(iii)				50.73(a)(2)(viii)				50.73(a)(2)(viii)(A)				Abstract below)	
			20.405(a)(1)(iv)				50.73(a)(2)(ix)				50.73(a)(2)(ix)(B)					
			20.405(a)(1)(v)				50.73(a)(2)(x)				50.73(a)(2)(x)					
LICENSEE CONTACT FOR THIS LER (12)																
NAME										TELEPHONE NUMBER						
STEVEN B. TIPPS, MANAGER NUCLEAR SAFETY AND COMPLIANCE, HATCH										AREA CODE		912 367-7851				
COMPLETE ONE LINE FOR EACH FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORT TO NRC						
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH DAY YEAR				
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO						
ABSTRACT (16)																

On 5/6/91, at 0333 CDT, Unit 2 was in a refueling outage with the vessel flooded and the core partially reloaded with fuel. At that time, a spurious electrical spike in the Neutron Monitoring System (NMS, EIIS Code IC) resulted in an actuation of the Reactor Protection System (RPS, EIIS Code JE). All control rods were fully inserted into the core at the time the signal was received. Therefore, no control rod motion occurred as a result of the signal. No other nuclear instrumentation showed unusual activity. Therefore, the affected instrument was bypassed and the scram was reset by licensed plant operations personnel. No other automatic actuations resulted from this event.

The cause of the event was spurious electrical spiking of a neutron monitoring instrument. Given the plant configuration at the time of the event, any NMS trip signal would have caused, per design, an actuation of the RPS. The cause of the spurious electrical spiking could not be determined. No testing on this instrument was in progress.

Corrective actions for this event included bypassing the affected neutron monitoring instrument, resetting the scram, and returning the affected instrument to service after its erratic operation had subsided.

**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	91	013	00	2	OF	3

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 5/6/91, at 0333 CDT, Unit 2 was in a refueling outage with the vessel flooded and the core partially reloaded with fuel. Since fuel loading was in progress, the Intermediate Range Monitors, (IRMs, EIIIS Code IG) in the Neutron Monitoring System (NMS, EIIIS Code IG) were operable and were configured with the Reactor Protection System (RPS, EIIIS Code JE) "shorting links" removed in accordance with Unit 2 Technical Specifications table 3.3.1-1, item 1. In this configuration, a single trip signal from any instrument in the NMS will initiate a full scram.

At 0333 CDT, IRM 2C51-K601D spiked, resulting in a full scram signal being received. All control rods were fully inserted into the core prior to the event. Therefore, no control rod motion occurred as a result of the RPS actuation. Per design, no other automatic actuations resulted from this scram signal. No other nuclear instrumentation indicated any unusual neutron flux levels in the core. The affected IRM continued its erratic behavior however, and was therefore bypassed by licensed plant operators. The scram signal was then reset. Deficiency Card 2-91-2013 was initiated at that time to document the condition, and Maintenance Work Order (MWO) 2-91-2178 was initiated to effect repair. No other operator actions were required, and fuel loading was continued.

After approximately 10 to 15 minutes, the erratic operation in IRM 2C51-K601D subsided, and its indications agreed with other neutron monitoring instrumentation. Therefore, licensed personnel returned the instrument to service, and no work was performed on MWO 2-91-2178. No further abnormal operation in this instrument was observed.

CAUSE OF EVENT

The cause of this event was spurious electrical spiking in an IRM. Because of the plant condition, the RPS logic was configured with the "shorting links" removed. In this configuration, a trip signal from any single neutron monitoring instrument will cause a full scram. Therefore, the spurious electrical spike in IRM 2C51-K601D resulted in a full scram signal being received. No cause for the spurious electrical spiking in this instrument could be determined, and its erratic operation subsided within 10 to 15 minutes.

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			
		91	013	00	3	OF	3

TEXT

REPORTABILITY 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 occurred. Specifically, a spurious electrical spike in an IRM caused an actuation of the plant's Reactor Protection System.

The Reactor Protection System automatically initiates a reactor scram to ensure the radioactive materials barriers, such as fuel cladding and pressure system boundary, are maintained, and to mitigate the consequences of transients and accidents. The NMS inputs into the RPS are designed to monitor neutron flux levels and to initiate a rod withdrawal block or an RPS actuation if neutron flux exceeds preset levels. In the event described in this report, the RPS actuated per design given the NMS signal which was introduced in the system by the spurious IRM spike. No other nuclear instrumentation indicated any unusual neutron flux levels were present in the core. While the affected IRM, 2C51-K601D, continued to experience erratic operation for several minutes following the event, all other neutron monitoring instrumentation indicated normally. No other automatic actuations resulted from the scram signal.

Based on the above analysis, it is concluded that this event had no adverse impact on nuclear safety.

CORRECTIVE ACTIONS

The affected IRM was bypassed and the scram signal was reset. Fuel loading activities were then continued with the instrument bypassed. Although no repair work was performed on the instrument under MWO 2-91-2178, erratic operation in this instrument subsided, and it was returned to service by licensed personnel. No further abnormal operation was observed.

ADDITIONAL INFORMATION

1. Other Systems Affected: No other systems were affected by this event, and no other automatic actuations resulted from this event.
2. Previous Similar Events: No events were reported in the past two years in which spurious electrical spikes in the NMS resulted in an RPS actuation.
3. Failed Components Identification: No failed components contributed to this event.