NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
PLANT HATCH, UNIT 2	0 5 0 0 0 3 6 6	1 OF 0 9

TITLE (4)

DEFICIENT PROCEDURE CAUSES INADEQUATE 18 MONTH REACTOR PROTECTION SYSTEM FUNCTIONAL TESTS

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
0 4	2 7	8 8	8 8	0 1 4	0 0	0 5	2 6	8 8		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
	4	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	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 and in Text, NRC Form 366A)
		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
J. D. Heidt, Nuclear Licensing Manager - Hatch	4 0 4 5 2 6 - 4 5 3 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On 04/27/88 at approximately 1415 CDT, Unit 2 was in cold shutdown with an approximate power level of 0 MWt (approximately 0 percent of rated power). At that time, Procedure Upgrade Program (PUP) personnel reported that the Logic System Functional Test (LSFT) procedures for the Reactor Protection System (RPS EIIS Code JC) did not test some portions of the RPS logic. Specifically, the Main Steam Isolation Valve (MSIV EIIS Code JM) and Turbine Stop Valve (TSV EIIS Code JJ) closure RPS logic was not completely tested and the RPS ten-second time delays were not tested at the required 18 month frequency. Thus, surveillance requirements were not adequately met resulting in a condition prohibited by the plant's Technical Specifications.

The root cause of this event is procedure inadequacy. The RPS LSFT procedures did not sufficiently cover the RPS logic to fully demonstrate compliance with the Technical Specifications requirements.

The corrective actions for this event included developing and performing a special purpose LSFT procedure, reviewing calibration history, and scheduling development of permanent procedure revisions.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
PLANT HATCH, UNIT 2	0 5 0 0 0 3 6 6	8 8	— 0 1 4	— 0 0	0 2 OF 0 9

TEXT (If more space is required, use additional NRC Form 366A's) (17)

A. REQUIREMENT FOR REPORT

This report is required per 10 CFR 50.73 (a)(2)(i), because a condition existed that was prohibited by the plant's Technical Specifications. Specifically, some of the surveillance requirements of Technical Specifications section 4.3.1.2 were not adequately met.

B. UNIT(s) STATUS AT TIME OF EVENT

1. Power Level/Operating Mode

Unit 2 was in cold shutdown at an approximate power level of 0 MWt (approximately 0 percent of rated power). The reactor pressure was atmospheric with a reactor coolant temperature of approximately 120 degrees Fahrenheit (°F).

2. Inoperable Equipment

There was no inoperable equipment that contributed to this event.

C. DESCRIPTION OF EVENT

1. Event

On 4/27/88 at approximately 1415 CDT, Procedure Upgrade Program (PUP) personnel reported that the Logic System Functional Test (LSFT) procedures for the Reactor Protection System (RPS EIIS Code JC) did not test some portions of the RPS logic. Therefore, the requirements of Technical Specifications section 4.3.1.2 were not being fully met. Deficiency Card 2-88-2177 was generated, as required by the plant's administrative control procedures, to document the specific inadequacies in the testing of the RPS logic.

The first identified inadequacy in the RPS LSFTs concerned the Main Steam Line Isolation Valve (MSIV EIIS Code JM) closure RPS initiation signal. Position switches, mounted on the eight MSIVs, open when the associated valve is more than 10 percent closed. The eight position-sensing channels are assigned to the four RPS trip logics A1, A2, B1, and B2 such that each logic receives signals from the MSIVs on two different main steam lines.

* U.S.GPO:1988-0-624-538/455

The arrangement of signals within each logic requires closing of at least one MSIV in each of the steam lines associated with that logic to cause a trip of that logic, which would in turn result in a trip of the respective trip system A or B. The overall logic of the RPS functions on a one-out-of-two-taken-twice basis.

PUP personnel determined that the monthly channel functional test was used to meet the LSFT requirement for the MSIV closure portion of the RPS logic. A review of the functional test revealed that it covered the logic only from the respective MSIV position switch to the associated 2C71-K3 relay contacts in the four RPS trip logics. Thus, there was no logic test which checked the ability of the parallel arrangement of 2C71-K3 relay contacts in each trip logic, representing the positions of the MSIVs in two steam lines, to properly cause a trip of that logic (i.e., to deactivate the respective 2C71-K14 relays).

The second identified inadequacy in the RPS LSFTs concerned the Turbine Stop Valve (TSV EIIS Code JJ) closure RPS initiation signal. Two position switches are mounted on each of the four TSVs, and the position switches open to indicate TSV closure when the TSV is more than 10 percent closed.

PUP personnel determined that the monthly channel functional test was used to meet the LSFT requirement for the TSV closure portion of the RPS logic. A review of the functional test revealed that it covered the logic only from the respective TSV position switch to the associated 2C71-K10 relay contacts in the four RPS trip logics. Thus, there was no logic test which checked the ability of the parallel arrangement of 2C71-K10 relay contacts in each trip logic, representing the positions of two TSVs, to properly cause a trip of that logic (i.e., to deactivate the respective 2C71-K14 relays).

The third and final inadequacy found in the RPS LSFTs concerned the 18 month LSFT requirement for calibration of the scram reset ten-second time delay relays. These relays prohibit a scram from being reset until ten seconds after its initiation. This permits the control rods to achieve their fully inserted position. PUP personnel determined that the calibration frequency for these relays did not meet the 18 month requirement.

In response to these deficiencies in the RPS LSFTs, at 1420 CDT, Operations personnel initiated a Limiting Condition for Operation (LCO 2-88-382). The LCO included the following actions. The reactor mode switch was locked in shutdown, and all control rods were verified fully inserted until the problems identified were resolved.

Special purpose procedure 34SP-041488-CS-1-2S was developed to perform the LSFT testing on the MSIV and TSV closure RPS initiation logic. On 5/9/88 at 2300 CDT, the testing was satisfactorily completed.

The calibration history of the RPS ten-second time delay relays was reviewed. The relays were found to have last been calibrated on 2/4/88 with all time delays found at ten seconds. Those calibrations were found to be consistent with meeting the 18 month frequency requirement in the future.

On 5/13/88, Operations personnel declared the RPS LSFTs complete and terminated LCO 2-88-382.

2. Dates/Times

Date	Time (CDT)	Description
4/27/88	1415	PUP personnel reported that the RPS LSFT procedures did not test some portions of the logic. Specifically, the MSIV and TSV closure RPS initiation logic was not completely tested and the RPS ten-second time delays were not tested at the required 18 month frequency. Thus, the requirements of Technical Specifications section 4.3.1.2 were not being fully met. A deficiency card was generated to document the condition.
	1420	Operations personnel initiated LCO 2-88-382 in response to the deficiencies in the RPS LSFTs.

Date	Time (CDT)	Description
4/27/88	1420	Development was begun of special purpose procedure 34SP-041488-CS-1-2S to perform the LSFT testing on the MSIV and TSV closure RPS initiation logic.
5/9/88	2300	The testing was satisfactorily completed under special purpose procedure 34SP-041488-CS-1-2S. The RPS time delay relays were determined to have last been calibrated on 2/4/88 with all time delays found at ten seconds.
5/13/88		Operations personnel declared the RPS LSFTs complete and terminated LCO 2-88-382.

3. Other Systems Affected

No systems, other than a portion of the RPS, were affected by this event. The RPS has no secondary functions.

4. Method of Discovery

This event was discovered as a part of the PUP. This is a long term program to upgrade all plant procedures. For surveillance procedures, the PUP includes a technical review to ensure that these procedures properly address all Technical Specifications requirements. The RPS LSFT procedures had not yet been completely through the PUP.

5. Operator Actions

Operations personnel performed the following actions:

1. Processed the deficiency card as required by the plant's administrative control procedures.

2. Initiated an LCO to ensure Unit 2 compliance with Technical Specifications requirements.

3. Satisfactorily performed special purpose procedure 34SP-041488-CS-1-2S to meet RPS LSFT requirements.

4. Terminated the LCO when RPS LSFT requirements were met.

6. Auto/Manual Safety System Response

No manual or automatic safety systems actuations occurred, nor were any required to occur.

D. CAUSE OF EVENT

1. Immediate Cause

The immediate cause of this event is the same as the root cause.

2. Root/Intermediate Cause

The root cause of this event is deficient RPS LSFT procedures. The RPS LSFT procedures did not sufficiently cover the RPS logic to assure full compliance with the requirements of Technical Specifications section 4.3.1.2.

E. ANALYSIS OF EVENT

The RPS automatically initiates a reactor scram to preserve the integrity of the fuel cladding and of the reactor coolant system, and minimize the energy which must be absorbed following a Loss Of Coolant Accident. The instrumentation section of the Technical Specifications describes the requirements that preserve the ability of the system to perform its intended function even during periods when portions of the system may be out of service due to maintenance.

These requirements assure the operability of RPS by prescribing surveillances at defined intervals to check the system's functional capabilities, setpoints, and response times. In this event, portions of the RPS were not fully tested in accordance with these requirements. Specifically, the MSIV and TSV closure RPS initiation logics were not completely tested and the RPS ten-second time delays were not properly tested at the required 18 month frequency.

The MSIV closure scram limits the release of fission products from the nuclear system. Closure of the TSVs with the reactor at power can result in a significant addition of positive reactivity to the core as the nuclear system pressure rise causes steam voids to collapse. The TSV closure scram counteracts the addition of positive reactivity resulting from increasing pressure by inserting negative reactivity with control rods.

The MSIV and TSV closure scrams are anticipatory of reactor high pressure. Also, the TSV closure scram initiates a scram earlier than does either the Neutron Monitoring System (NMS EIIS Code IG) or reactor high pressure. The high pressure scram in conjunction with the pressure relief system is adequate to preclude overpressurizing the nuclear system; the TSV closure scram provides additional margin to the nuclear system pressure limit.

Although portions of the MSIV and TSV closure RPS initiation logics were not properly covered by the RPS LSFTs in the past, a complete LSFT on this logic circuitry, using a special purpose procedure, was completed satisfactorily on 5/9/88. These surveillance results, as well as the overall functional diversity of the RPS, provide assurance that the RPS was capable of performing its intended function.

The RPS reset switch is used to momentarily bypass the seal-in contacts of the final actuators of the reactor shutdown systems. These seal-in contacts are located downstream from the four RPS trip logics outputs. The reset is effected in conjunction with auxiliary relays. If a single channel is tripped, the reset is accomplished immediately upon operation of the reset switch. On the other hand, if a reactor scram situation is present, manual reset is prohibited for a ten-second (2C71-K22A-D time delay relays) period to permit the control rods to achieve their fully inserted position.

Although these ten-second time delay relays were not calibrated at the frequency required by the Technical Specifications in the past, when they were last calibrated on 2/4/88 all time delays were found at 10 seconds. Additionally, if the time delay relays had not been able to provide the required time delay for reset of the scram, the procedural controls governing scram recovery by Operations personnel would assure the control rods have sufficient time to achieve their fully inserted position.

Based on the above information, it is concluded that this event had no adverse impact on nuclear safety. Additionally, while this event occurred when Unit 2 was shutdown, the above analysis is applicable to all power levels and operating modes.

F. CORRECTIVE ACTIONS

The corrective actions for this event included:

1. Developing and performing special procedure 34SP-041488-CS-1-2S to bring Unit 2 into full compliance with Technical Specifications section 4.3.1.2.

2. Reviewing the calibration history of the RPS ten-second time delay relays and assuring that the most recent calibrations were consistent with meeting the 18 month frequency requirement in the future.

3. Scheduling development of permanent procedure revisions to assure future RPS LSFTs will fully meet the requirements of the Technical Specifications. An estimated completion date for these procedure revisions is prior to the next Unit 2 refueling outage.

G. ADDITIONAL INFORMATION

1. FAILED COMPONENT(s) IDENTIFICATION

There was no component failure experienced in this event.

2. PREVIOUS SIMILAR EVENTS

There has been one similar event to the one described in this LER. It was reported in LER 50-366/1988-002 (dated 2/19/88).

This LER describes two events where surveillance requirements were not met due to procedural inadequacies. Specifically, event number 1 in this LER is similar since it involved the RPS LSFTs not fully testing the NMS portion of the RPS initiation logic.

The cause of event number 1 was another deficient procedure. The corrective actions included developing and performing a special purpose procedure to cover the missed portion of the LSFT and scheduling development of permanent procedure revisions.

However, the corrective actions for the similar event would not have prevented the event described by LER 50-366/1988-014 because the cause of the similar event was a different deficient procedure, as noted above.

The long term corrective actions to prevent these sorts of events is PUP. In both of the events discussed herein, PUP personnel identified the procedure inadequacy. This detection testifies to the effectiveness of the program. While the events are reportable per the requirements of 10 CFR 50.73, long term corrective actions were in progress to detect and correct procedure deficiencies. PUP will continue to review plant procedures against their respective Technical Specifications requirements to identify problems. Based on the results of these reviews, appropriate corrective actions will be performed to correct any noted deficiencies.

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SL-4720
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X7GJ17-H310

May 26, 1988

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PLANT HATCH - UNIT 2
NRC DOCKET 50-366
OPERATING LICENSE NPF-5
LICENSEE EVENT REPORT
DEFICIENT PROCEDURE CAUSES INADEQUATE 18 MONTH
REACTOR PROTECTION SYSTEM FUNCTIONAL TESTS

Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(i), Georgia Power Company is submitting the enclosed Licensee Event Report (LER) concerning a condition that was prohibited by the plant's Technical Specifications. The event occurred at Plant Hatch - Unit 2.

Sincerely,

R. P. McDonald

CLT/ct

Enclosure: LER 50-366/1988-014

c: (see next page)

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c: Georgia Power Company
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GO-NORMS

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