NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
EDWIN I. HATCH, UNIT I	0 5 0 0 0 3 6 6	1 OF 0 1 4

TITLE (4)
ENGINEERED SAFETY FEATURE ACTUATION AND REACTOR SCRAM

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 1	1 9	8 6	8 6	0 0 3	0 0	0 2	1 8	8 6		0 5 0 0 0
										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)			
2	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 0 1 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)	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
Raymond D. Baker, Nuclear Licensing Manager - Hatch	AREA CODE 4 0 4 5 2 6 - 7 0 1 6

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	
X	B	O F C O	G 0 8 0	Y							

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 01/19/86 at approximately 0444 CST, as part of a normal shutdown, plant personnel shifted the reactor mode switch position from "Run" to "Startup/Hot Standby". At approximately 0523 CST, a one-half Group 1 logic actuation occurred (from the "B" channel of the logic). At approximately 0533 CST, with reactor power at less than 1% of rated thermal power (15 MWt), the "A" channel of that logic actuated and caused a full Group 1 logic actuation. When the full Group 1 isolation signal occurred, the inboard and outboard Main Steam Isolation Valves (MSIVs) and other Group 1 isolation valves closed as required. The closing of the MSIVs resulted in a reactor scram.

These events were the result of a high turbine building temperature condition in the vicinity of the Main Steam Lines and the failure of three (3) contacts on the mode switch to move to the desired position.

The cause of the high temperature condition was corrected and an operator aid (which provides written information on proper movement of the mode switch) was placed on the reactor mode switch.

No actual or potential adverse safety consequences or implications resulted from this event. There is no known previous similar event with the same cause.

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

This LER is required by 10CFR 50.73(a)(2)(iv) since it reports the actuation of engineered safety features (i.e., the Reactor Protection System and the primary containment Groups 1 and 2 isolation valves).

On 01/19/86 at approximately 0444 CST, plant personnel were using the "NORMAL REACTOR SHUTDOWN" procedure (34GO-OPS-013-2) to start a plant shutdown in order to investigate the "RECIRCULATION PUMP A COOLER HOUSING LEAK OR CONDENSATE BUILDUP" alarm. As required by that procedure, plant personnel shifted the reactor mode switch position from "Run" to "Startup/Hot Standby". At approximately 0523 CST, a one-half Group 1 logic actuation occurred (from the "B" channel of the logic). At approximately 0533 CST, with reactor power at less than 1% of rated thermal power (15 MWt), the "A" channel of the logic actuated and caused a full Group 1 logic actuation. When the Group 1 isolation signal occurred, the inboard and outboard Main Steam Isolation Valves (MSIVs) and other Group 1 isolation valves closed as required. The closing of the MSIVs resulted in a reactor scram.

The scram recovery proceeded smoothly with no major problems. Reactor water level was initially maintained by the control rod drive pumps. The control rods were verified to be in their full in position and the scram logic was reset. Reactor pressure then increased (as can be expected with the MSIVs closed) to approximately 1027 psig which resulted in another actuation of the RPS logic (an actual scram did not occur because the control rods were still fully inserted as a result of the previous scram). The High Pressure Coolant Injection (HPCI) system and the Reactor Core Isolation Cooling (RCIC) system were both manually started in the automatic control mode to reduce reactor pressure (RCIC was also used to control level). Reactor pressure and level then began to decrease. At that time RCIC tripped, and reactor water level decreased to approximately +2.5 inches (referenced to instrument zero). This low water level resulted in another actuation of the RPS logic (an actual scram did not occur because the control rods were still fully inserted from the scram) and a Group 2 isolation signal (the required valves closed). RCIC was then manually restarted and the flow controller on that system was placed in the manual mode to maintain reactor water level.

An investigation of the scram and the Group 1 isolation revealed the following:

1. When the reactor mode switch position was shifted from "Run" to "Startup/Hot Standby", all of the desired contacts did not shift to their intended positions (i.e., contacts 7, 55, and 63 remained open when they should have closed).

2. Contact 7 [for the "A" channel of the turbine building high temperature isolation logic in the Main Steam Line (MSL) area] and 55 (for the "B" channel of the turbine building high temperature logic in the MSL area) are used to prevent a high temperature condition in the MSL area from causing MSIV closure when the mode switch is in the "Startup/Hot Standby" position.

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3. With contacts 7 and 55 open (i.e., contrary to their desired position with the mode switch in the "Startup/Hot Standby" position) the MSIVs automatically closed when the Group 1 logic actuation resulted from a high temperature condition in the MSL area of the turbine building. Further investigation revealed that the turbine building high temperature condition was the result of a tarpaulin that had been placed over the grating near the MSLs to minimize airborne activity in the turbine building. However, the tarpaulin also prevented adequate ventilation of that area. This resulted in higher than normal temperatures thus causing the previously noted Group 1 isolation and reactor scram. The tarpaulin was subsequently removed.

4. Contact 63 is used in the control rod block logic. With that contact not properly closed, the logic would have been unable to perform the rod block function if required. However, any control rod position changes would still have been limited to movement of only one rod at a time by the following controls: Rod Worth Minimizer System, Rod Sequence Control System, Reactor Manual Control System, and the "PLANT STARTUP" procedure (34GO-OPS-001-1S).

5. The reactor mode switch was operated several times during the subject investigation and make up of the individual contacts was visually observed. Plant personnel determined that the mode switch has an intermediate position that can be mistaken for the fully engaged position when placing the switch from "Run" to "Startup/Hot Standby". This intermediate position does not allow the required contact makeup of contacts 7, 55, and 63. However, when the switch is fully engaged, the contacts makeup as required.

To prevent recurrence of the subject event, a written instruction to positively notch/engage the reactor mode switch when moving it to the "Startup/Hot Standby" position was incorporated into an operator aid which has been attached to the mode switch.

An investigation by plant personnel determined that RCIC had tripped because its flow controller failed to maintain flow at a constant rate which resulted in erratic system operation and eventually caused an overspeed trip. As a result, the RCIC manual/auto (M/A) station was recalibrated and the self synchronizer control amplifier (EIIS identifier: BO; manufacturer: General Electric ; model number: catalog number 50-543031-AAAZIPAE) was replaced. RCIC was then functionally tested satisfactorily per the "RCIC PUMP OPERABILITY" procedure (34SV-E51-002-2) and returned to service on 01/23/86 at approximately 1540 CST.

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Plant engineering personnel have rereviewed I & E Information Notice 83-42 which was issued by the NRC on 06/23/83, and Service Information Letter (SIL) No. 397 which was issued by the General Electric Company in November, 1983, for applicability to the subject event. This review resulted in a determination that the mode switch failures at other facilities which were described in those two documents were unrelated to the subject event.

No actual or potential adverse safety consequences or implications resulted from this event. There is no known previous similar event at Plant Hatch with the same cause.

Georgia Power Company
333 Piedmont Avenue
Atlanta, Georgia 30308
Telephone 404 526-6526

Mailing Address:
Post Office Box 4545
Atlanta, Georgia 30302

Georgia Power
the southern electric system

L. T. Gucwa
Manager Nuclear Safety and
Licensing Department

SL-374
0166C

February 18, 1986

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

Attached is Licensee Event Report 50-366/1986-003. This report meets the reporting requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,

L. T. Gucwa/DM

L. T. Gucwa

CBS/lc

Attachment

c: Mr. J. T. Beckham, Jr.
Mr. H. C. Nix, Jr.
NRC-Region II
GO-NORMS

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