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SOUTHERN COMPANY
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Docket No. 50-366

HL-5924

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

Edwin I. Hatch Nuclear Plant - Unit 2
Licensee Event Report
Inadequate Procedure Results in RPS Actuation on
Scram Discharge Volume High Water Level

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv), Southern Nuclear Operating Company is submitting the enclosed Licensee Event Report (LER) concerning the RPS actuation on Scram discharge volume high water level during performance of a logic test procedure.

Respectfully submitted,

Lewis Sumner

H. L. Sumner, Jr.

JAW/eb

Enclosure: LER 50-366/2000-003

cc: Southern Nuclear Operating Company
Mr. P. H. Wells, Nuclear Plant General Manager
SNC Document Management (R-Type A02.001)

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. L. N. Olshan, Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. L. A. Reyes, Regional Administrator
Mr. J. T. Munday, Senior Resident Inspector - Hatch

IE22

NRC FORM 366 (06-1998) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If a document used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

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TITLE (4)
Inadequate Procedure Results in RPS Actuation on Scram Discharge Volume High Water Level

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 NAME	DOCKET NUMBER(S) 05000
03	23	2000	2000	003	00	04	18	2000		DOCKET NUMBER(S) 05000

OPERATING MODE (9)	5
POWER LEVEL (10)	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(vii)		
20.2203(a)(1)	20.2203(a)(3)(i)	50.73(a)(2)(ii)	50.73(a)(2)(ix)		
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71		
20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER		
20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A		
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Steven B. Tipps, Nuclear Safety and Compliance Manager, Hatch	(912) 367-7851

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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 15 single-space typewritten lines) (16)

On 03/23/2000 at 2140 EST, Unit 2 was in the Refuel mode with fuel in the vessel, the refueling cavity flooded, and refueling outage activities in progress. At that time, personnel were performing subsection 7.11 of surveillance procedure 42SV-C71-001-2S, "Reactor Protection System LSFT," when an unplanned full reactor protection system actuation occurred on high water level in the scram discharge volume. The actuation occurred after the scram discharge volume high water level scram bypass switch had been moved from "bypass" to "normal" as required by procedure 42SV-C71-001-2S. All control rods were inserted fully and the control rod drive system was out of service; therefore, the reactor protection system actuation resulted in no appreciable rod movement.

This event was the result of an inadequate testing procedure. Procedure 42SV-C71-001-2S required a manual scram to be inserted; this action closed the scram discharge volume vent and drain valves allowing the volume to fill. Following testing, the procedure required the scram to be reset and the bypass switch to be moved to the "normal" position. However, the procedure did not require personnel to wait for the volume to drain before moving the switch. Therefore, a reactor protection system actuation was received when the bypass switch was repositioned before the volume had drained. Corrective actions include revising procedure 42SV-C71-001-2S to require personnel to verify the scram discharge volume high level alarm has cleared before placing the bypass switch to the "normal" position.

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

PLANT AND SYSTEM IDENTIFICATION

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

DESCRIPTION OF EVENT

On 03/23/2000 at 2140 EST, Unit 2 was in the Refuel mode with fuel in the vessel, the refueling cavity flooded, and refueling outage activities in progress. At that time, personnel were performing subsection 7.11 of surveillance procedure 42SV-C71-001-2S, "Reactor Protection System LSFT," when an unplanned full reactor protection system (EIIS Code JC) actuation occurred on high water level in the scram discharge volume. The actuation occurred after the scram discharge volume high water level scram bypass switch had been moved from "bypass" to "normal" as required by procedure 42SV-C71-001-2S. All control rods were inserted fully and the control rod drive system (EIIS Code AA) was out of service; therefore, the reactor protection system actuation resulted in no appreciable rod movement.

CAUSE OF EVENT

This event was the result of an inadequate testing procedure. Subsection 7.11 of procedure 42SV-C71-001-2S provides instructions for testing the proper functioning of the scram discharge volume high water level scram bypass switch. In order to set up the logic for the test, the procedure requires the reactor mode switch to be moved to the shutdown position. This action configures the logic to energize the high water level scram bypass relays when the switch is moved to the "bypass" position. It also inserts a manual scram and closes the scram discharge vent and drain valves causing the volume to fill. The procedure then requires, after verification of the proper operation of the scram bypass relays, that the manual scram signal be reset and the bypass switch be repositioned to the "normal" position. However, the procedure does not require personnel to wait for the scram discharge volume to drain before moving the switch. Consequently, an unplanned reactor protection system actuation was received when personnel, following the procedure as written and before the scram discharge volume had drained, moved the bypass switch to the "normal" position.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This report is required by 10 CFR 50.73 (a)(2)(iv) because an unplanned actuation of an engineered safety feature occurred. Specifically, the reactor protection system actuated on high water level in the scram discharge volume. This was a valid signal arising from an actual plant condition for which this engineered safety feature was designed to respond.

The control rod drive system controls core reactivity by positioning control rods. The system is comprised of 137 cruciform-shaped rods containing boron or hafnium, a hydraulic actuator and hydraulic control unit for each rod, two 100-percent capacity control rod drive pumps, and the necessary piping and valves. The

control rod drive system has two basic modes of operation. The normal drive function is used to control reactivity for power production. The scram function is used to drive all control rods rapidly and fully into the core to shut down the reactor.

In the normal drive function, the system uses control rod drive pump pressure to move one rod at a time in small increments or notches. The scram function works by positioning pneumatic scram valves such that the under-piston area of the control rod drive is exposed to hydraulic control unit accumulator and reactor pressure and the over-piston area is vented to the scram discharge volume. Upon receipt of a scram signal, the scram valves open; the discharge volume vent and drain valves close; and the control rods are driven into the core. Under normal circumstances, rated reactor pressure provides the motive force to scram a control rod. The hydraulic control unit for each control rod contains a high-pressure accumulator that helps initiate the scram function and ensures the rod can be fully inserted on a scram signal even in situations where reactor pressure is low.

The scram discharge volume receives the water displaced by the motion of the control rod drive pistons during a reactor scram. Should this volume fill to a point where there is insufficient volume to accept the displaced water, control rod insertion would be hindered. Therefore, a reactor scram is initiated while the remaining free volume is still sufficient to accommodate the water from a full core scram. The scram discharge volume high level scram bypass switch allows this scram signal to be bypassed so that the scram logic can be reset, the scram discharge volume vent and drain valves can be reopened, and the volume can be drained following a full reactor scram.

In this event, a testing procedure required a manual scram to be inserted, resulting in the scram discharge volume vent and drain valves closing and the scram valves opening as designed. This discharged water into the scram discharge volume, which began to fill because its drain valves were closed. When the high water level scram bypass switch was moved from "bypass" to "normal," a full reactor protection system actuation signal was generated per design. All control rods were inserted fully and the control rod drive system was out of service; therefore, the reactor protection system actuation resulted in no appreciable rod movement. However, had this event occurred under other operating conditions, the control rods would have scrammed as designed, shutting down the reactor and placing the plant in a safe condition.

Based on this analysis, it is concluded that this event had no adverse impact on nuclear safety. This analysis applies to all power levels and operating conditions.

CORRECTIVE ACTIONS

Surveillance procedure 42SV-C71-001-2S will be revised prior to its next scheduled performance to require personnel to verify that the scram discharge volume high level alarm has cleared before placing the scram discharge volume high water level scram bypass switch to the "normal" position. This already is a requirement of the corresponding Unit 1 surveillance procedure, 42SV-C71-001-1S, "Reactor Protection System LSFT." Therefore, this procedure does not have to be revised.

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TEXT *(If more space is required, use additional copies of NRC Form 366A)* (17)

ADDITIONAL INFORMATION

Other Systems Affected: No systems other than those already mentioned in this report were affected by this event.

Failed Components Information: No failed components directly caused or resulted from this event.

Commitment Information: This report does not create any permanent licensing commitments.

Previous Similar Events: There have been two previous similar events reported in the last two years in which an unplanned reactor protection system actuation signal on scram discharge volume high water level was received. These were reported in Licensee Event Reports 50-366/1998-003, dated 10/14/98, and 50-321/1999-001, dated 5/10/99. In these previous events, the supply to the scram valve air header was isolated inadvertently. With its air supply isolated, the header depressurized causing the scram discharge volume vent and drain valves to close, the scram valves to open, and the scram discharge volume to fill with water. In the first event, it could not be determined how the air supply valve was closed; in the second event, the air supply valve was closed under a clearance.

Corrective actions for the previous events included opening the air supply valve, re-pressurizing the scram valve air header, checking the positions of other valves in the pneumatic lineup, and revising several plant drawings. These actions could not have prevented this event because they did not address the procedure that was found to be in error in this event.