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Docket No. 50-366

HL-5928

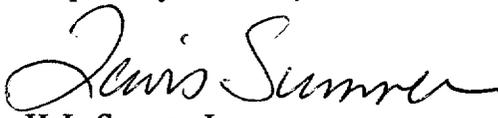
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Edwin I. Hatch Nuclear Plant - Unit 2
Licensee Event Report
Blown Fuse Results in Unplanned
Actuation of Engineered Safety Feature System

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 a blown fuse which resulted in an unplanned actuation of an engineered safety feature system.

Respectfully submitted,


H. L. Sumner, Jr.

JAW/eb

Enclosure: LER 50-366/2000-005

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

JEJ

LICENSEE EVENT REPORT (LER)

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

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.

FACILITY NAME (1)
Edwin I. Hatch Nuclear Plant - Unit 2

DOCKET NUMBER (2)
05000-366

PAGE (3)
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TITLE (4)
Blown Fuse Results in Unplanned Actuation of Engineered Safety Feature System

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)
04	02	2000	2000	005	00	04	21	2000		05000
										DOCKET NUMBER(S) 05000

OPERATING MODE (9)	4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § : (Check one or more) (11)								
POWER LEVEL (10)	0	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)				X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES	(If yes, complete EXPECTED SUBMISSION DATE)								

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-space typewritten lines) (16)

On 4/2/2000 at 0030 EST, Unit 2 was in the Cold Shutdown mode. At that time, fuse 2A71B-F21A in main control room panel 2H11-P622 blew while licensed personnel were re-opening primary containment isolation valves 2G11-F003 and 2G11-F019. These valves, the only ones powered through fuse 2A71B-F21A, had closed as expected during the performance of surveillance procedure 42SV-R43-008-2S, "Diesel Generator 2A LOCA/LOSP LSFT," when the bus powering these valves was de-energized momentarily as part of the surveillance. While personnel were restoring valves 2G11-F003 and 2G11-F019 to their pre-test position, fuse 2A71B-F21A blew unexpectedly, causing the valves to close again on loss of power. The blown fuse was replaced and the valves were re-opened without further incident.

The cause of this event was a blown fuse. These valves are designed to close upon loss of power. Therefore, when the fuse in their power supply circuit blew, the valves closed as designed. The reason the fuse blew was not identified. However, it may have been the result of a weak fuse since no problems, such as a ground, were evident when the valves were re-opened following fuse replacement.

Corrective actions for this event included replacing the blown fuse and re-opening valves 2G11-F003 and 2G11-F019.

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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 (EIS Code XX).

DESCRIPTION OF EVENT

On 4/2/2000 at 0030 EST, Unit 2 was in the Cold Shutdown mode. At that time, fuse 2A71B-F21A in main control room panel (EIS Code JL) 2H11-P622 blew while licensed personnel were re-opening inboard primary containment isolation valves (EIS Code JM) 2G11-F003 and 2G11-F019, causing the valves to close. Valves 2G11-F003 and 2G11-F019 are the inboard isolation valves for the drywell floor and equipment drain sumps (EIS Code IJ), respectively. They are air-operated valves that are designed to close when power to their solenoid-operated pilot valves is lost. They are the only valves whose solenoid-operated pilot valves are powered through fuse 2A71B-F21A; therefore, they were the only valves affected when the fuse blew.

The two valves had closed as expected during the performance of surveillance procedure 42SV-R43-008-2S, "Diesel Generator 2A LOCA/LOSP LSFT," when the bus powering these valves was de-energized momentarily as part of a simulated loss-of-offsite power signal. While licensed personnel were restoring valves 2G11-F003 and 2G11-F019 to their pre-test position, fuse 2A71B-F21A blew unexpectedly causing the valves again to close on loss of power. The blown fuse was replaced and the valves were re-opened without further incident.

CAUSE OF EVENT

The cause of this event was a blown fuse. Valves 2G11-F003 and 2G11-F019 are designed to close upon loss of power to their solenoid-operated pilot valves. Therefore, when the fuse in the power supply circuit to the two solenoid coils blew, the valves closed as designed.

The reason the fuse blew was not identified. However, this event may have been the result of a weak fuse. No hard fault, such as a ground or failed coil, was evident when the valves were re-opened following fuse replacement. Furthermore, the load on this circuit is small, consisting of only two solenoid coils, two relay coils, and eight lights. Excessive current draw due to simultaneous operation of other components on this circuit therefore was not possible, nor was it possible that these circuit elements could draw enough current to blow fuse 2A71B-F21A absent a hard fault. Thus, it appears probable that the fuse had deteriorated or otherwise degraded such that it blew under normal current conditions.

REPORTABILITY ANALYSIS AND SAFETY ASSESSMENT

This event is reportable per 10 CFR 50.73 (a)(2)(iv) because an unplanned actuation of an engineered safety feature system occurred. Specifically, two inboard Group 2 primary containment isolation valves, part of the

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

primary containment isolation system (EIS Code JM), closed in response to a loss of power caused by a blown fuse.

The primary containment isolation system, an engineering safety feature system, is designed to close valves in pipes penetrating the containment boundary when the possibility of a leak is indicated. The primary containment isolation valves are divided into several groups, each group sharing similar functions. Group 2 primary containment isolation valves are those which communicate with the primary containment atmosphere but typically not with the reactor coolant system. In general, primary containment isolation valves are controlled by logic whose design is "fail-safe"; that is, the valves are maintained in the open position by a continuously energized control circuit and automatically shift to their safe or emergency configuration upon loss of power.

In this event, a blown fuse resulted in a loss of power to inboard Group 2 primary containment isolation valves 2G11-F003 and 2G11-F019 as described previously. The valves responded per design by closing. Had an event occurred in which primary containment isolation was required, the valves would have been in their required position.

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

CORRECTIVE ACTIONS

The blown fuse was replaced. Licensed personnel then re-opened valves 2G11-F003 and 2G11-F019, returning them to their desired position.

ADDITIONAL INFORMATION

1. Other Systems Affected: No systems other than those mentioned in this report were affected by this event.
2. Failed Components Information: No failed components either contributed to or resulted from this event.
3. Commitments: No permanent commitments are created as a result of this report.
4. Previous Similar Events: Two Licensee Event Reports have been submitted in the past two years in which a blown fuse resulted in unexpected engineered safety feature system actuations. These events were described in LERs 50-321/1998-002, dated 4/28/1998, and 50-321/2000-003, dated 2/22/2000. Corrective actions for these previous similar events included replacing the blown fuses, replacing a failed relay coil, and reviewing the predictive failure program for relay coils. These actions could not have prevented this event because the involved fuses were located in different circuits and blew for apparently unrelated reasons.