Alabama Power Company
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Telephone 205 868-5581

W. G. Hairston, III
Senior Vice President
Nuclear Operations

December 6, 1990

Alabama Power
the southern electric system

10CFR50.73

Docket No. 50-364

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

Gentlemen:

Joseph M. Farley Nuclear Plant - Unit 2
Licensee Event Report No. LER 90-004-00

Joseph M. Farley Nuclear Plant, Unit 2, Licensee Event Report No. LER 90-004-00 is being submitted in accordance with 10CFR50.73.

If you have any questions, please advise.

Respectfully submitted,

W. G. Hairston, III

WGH,III/BHW:maf24.14

Enclosure

cc: Mr. S. D. Ebneter
Mr. G. F. Maxwell

IE22
1/1

NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Joseph M. Farley - Unit 2	0 5 0 0 0 3 6 4	1 OF 0 3

TITLE (4) Actuation of Engineered Safety Feature Equipment Caused By An Electrical Ground In the Solid State Protection 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 NAMES	DOCKET NUMBER(S)
1 1	1 6	9 0	9 0	— 0 0 4	— 0 0	1 2	0 6	9 0		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)			
6	20.402(b)	20.405(c)	X 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)	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
D. N. Morey, General Manager-Nuclear Plant	AREA CODE 2 0 5 8 9 9 - 5 1 5 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	

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)

At 1704 on 11-16-90, during a refueling outage, an actuation of engineered safety feature (ESF) equipment occurred. An unexpected "A" train safety injection (SI) occurred when the "A" train solid state protection system (SSPS) mode selector switch was placed in the OPERATE position. An electrical ground in the SSPS caused an erroneous SI actuation signal. The mode selector switch was repositioned as a part of the preparation for the integrated safeguards surveillance test.

This event was caused by a ground on pin 37 of SSPS card A206. A previous inspection of Termi-point connections in the SSPS cabinets is believed to have caused a single strand of wire from pin 37 to come in contact with the chassis of the SSPS cabinet. The ground caused an erroneous SI actuation signal. The SI signal was blocked until the mode selector switch was placed in the OPERATE position.

The Termi-point connection on pin 37 of card A206 was replaced. This cleared the ground. Physical testing of Termi-point connections in both trains of the SSPS has been completed. The integrated safeguards testing for both trains of the SSPS was completed satisfactorily. An inspection of both trains of SSPS will be performed to ensure no other connection problems exist. Routine surveillance testing performed prior to the startup of the unit will provide further assurance that the SSPS will operate properly.

Plant and System Identification

Westinghouse - Pressurized Water Reactor
Energy Industry Identification System codes are identified in the text as [XX].

Summary of Event

At 1704 on 11-16-90, during a refueling outage, an actuation of engineered safety feature (ESF) [JE] equipment occurred. An unexpected "A" train safety injection (SI) occurred when the "A" train solid state protection system (SSPS) mode selector switch was placed in the OPERATE position. An electrical ground in the SSPS [JG] caused an erroneous SI actuation signal. The mode selector safeguards switch was repositioned as part of the preparation for the integrated safeguards surveillance test.

Description of Event

On 11-16-90, Unit 2 was in a refueling outage and preparations were being made for the performance of the integrated safeguards testing. The reactor core had been reloaded and the refueling cavity was filled. In both trains of SSPS, the mode selector switches were in the TEST position. Thus the protective functions of the SSPS were defeated as is normally the case during a refueling outage.

Preparation for the integrated safeguards testing included placing the "A" train mode selector switch in the OPERATE position in accordance with the surveillance procedure. At this time, an unexpected "A" train SI occurred. All "A" train ESF equipment operated properly.

Following the SI, the operators verified that all ESF equipment had responded properly. The unnecessary equipment was then secured.

An investigation into the cause of the SI was begun immediately. The investigation found that a single strand of wire was protruding from pin 37 of SSPS card A206. This wire grounded the output of card A206 and made it appear to SSPS that a low steam line pressure SI was necessary. When the "A" train mode selector switch was placed in the OPERATE position this signal was unblocked resulting in the SI actuation.

Earlier in the outage, testing of the Termi-point clips in the SSPS cabinets had been performed in response to Westinghouse Technical Bulletin 89-06. Even though the Termi-point inspection identified no problem with pin 37, subsequent movement of wiring to allow access to other pins apparently caused the wire strand to become loose and caused the ground to occur. The Termi-point connection on pin 37 of card A206 has been replaced and tested.

Cause of Event

This event was caused by a ground on pin 37 of SSPS card A206. Previous inspections of Termi-point connections in the SSPS cabinets is believed to have caused a single strand of wire from pin 37 to come in contact with the chassis of the SSPS cabinet. The ground caused an erroneous SI actuation signal. The SI signal was blocked until the mode selector switch was placed in the OPERATE position.

Reportability Analysis and Safety Assessment

This event is reportable because of the actuation of engineered safety feature equipment. The required equipment operated per design. The health and safety of the public were not affected by this event.

Corrective Action

The Termi-point connection on pin 37 of card A206 was replaced. This cleared the ground. Physical testing of Termi-point connections in both trains of the SSPS has been completed. The integrated safeguards testing for both trains of the SSPS was completed satisfactorily. An inspection of both trains of SSPS will be performed to ensure no other connection problems exist. Routine surveillance testing which is performed prior to the startup of the unit will provide further assurance that the SSPS will operate properly.

Additional Information

No similar LERs have been submitted by Farley Nuclear Plant.

No components failed during this event.

This event would not have been more severe if it had occurred under a different operation condition.