[redacted]GUL[redacted]RY INFORMATION DISTR[redacted]UTI[redacted] SYSTEM (RIDS)

ACCESSION NBR: 8708130217 DOC. DATE: 87/08/10 NOTARIZED: NO DOCKET #
FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
AUTH. NAME AUTHOR AFFILIATION
SCHWABENBAUER Carolina Power & Light Co.
WATSON, R. A. Carolina Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-042-00: on 870709, wrong fuses pulled during process of placing Clearance OP-87-1290 resulting in automatic reactor/ turbine trip. Caused by personnel error. Operator training conducted re fuse labeling conventions. W/870810 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: Application for permit renewal filed. 05000400

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	PD2-1 LA	1	1	PD2-1 PD	1	1
	BUCKLEY, B	1	1			
INTERNAL:	ACRS MICHELSON	1	1	ACRS MOELLER	2	2
	AEOD/DOA	1	1	AEOD/DSP/NAS	1	1
	AEOD/DSP/ROAB	2	2	AEOD/DSP/TPAB	1	1
	DEDRO	1	1	NRR/DEST/ADE	1	0
	NRR/DEST/ADS	1	0	NRR/DEST/CEB	1	1
	NRR/DEST/ELB	1	1	NRR/DEST/ICSB	1	1
	NRR/DEST/MEB	1	1	NRR/DEST/MTB	1	1
	NRR/DEST/PSB	1	1	NRR/DEST/RSB	1	1
	NRR/DEST/SGB	1	1	NRR/DLPQ/HFB	1	1
	NRR/DLPQ/QAB	1	1	NRR/DOEA/EAB	1	1
	NRR/DREP/RAB	1	1	NRR/DREP/RPB	2	2
	NRR/PMAS/ILRB	1	1	REG FILE 02	1	1
	RES DEPY GI	1	1	RES TELFORD, J	1	1
	RES/DE/EIB	1	1	RGN2 FILE 01	1	1
EXTERNAL:	EG&G GROH, M	5	5	H ST LOBBY WARD	1	1
	LPDR	1	1	NRC PDR	1	1
	NSIC HARRIS, J	1	1	NSIC MAYS, G	1	1

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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)
SHEARON HARRIS PLANT UNIT 1	0 5 0 0 0 4 0 0	1 OF 0 4

TITLE (4)

REACTOR TRIP - INCORRECT FUSES PULLED

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 7	0 9	8 7	8 7	— 0 4 2	— 0 0	0 8	1 0	8 7		0 5 0 0 0

OPERATING MODE (9)	1
POWER LEVEL (10)	1 0 0

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

	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
	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)

	73.71(b)
	73.71(c)
	OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
R. SCHWABENBAUER (REGULATORY COMPLIANCE)	9 1 9 — 3 6 2 - 2 6 6 9

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)

The plant was operating in Mode 1 at 100 percent reactor power on July 9, 1987. Operations personnel were preparing a clearance to work on the solenoid of valve 1AF-161, which is for the Ammonia Supply to Steam Generator 'C'. The clearance was to be implemented by pulling 2 fuses, L5B/1967 and L6B/1967, which are located in Auxiliary Relay Panel 1B-SB.

Due to a misinterpretation of plant prints and the physical location of the fuses, the wrong fuses were pulled. This caused the Feedwater Regulating Valve for Steam Generator 'C' to shut, stopping all feedwater flow to Steam Generator 'C'.

This resulted in an automatic reactor/turbine trip at 1007 hours due to Steam Generator low-low level coincident with steam flow-feed flow mismatch.

Plant response to the trip was normal except three Steam Generator blowdown valves did not automatically shut and were manually isolated.

Steam Generator water levels were restored with the Auxiliary Feedwater System.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SHEARON HARRIS PLANT UNIT 1	0 5 0 0 0 4 0 0	8 7	— 0 4 2	— 0 0	0 2 OF 0 4

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

DESCRIPTION:

The plant was operating in Mode 1 at 100 percent reactor power on July 9, 1987. Operations personnel were in the process of placing clearance OP-87-1290 to accomplish repairs to the solenoid of valve 1AF-161. This valve is the isolation valve for an ammonia supply to Steam Generator (SG) 'C'. The clearance was to be implemented by pulling fuses L5B/1967 and L6B/1967 located in Auxiliary Relay Panel (ARP) 1B-SB.

The clearance request as submitted, required the removal of fuses FU/6 ARP-1BSBF2 and FU/5 ARP-1BSBF2. The clearance center operator realized that this designation was not consistent with the current drawings and partially corrected the request to read L6B ARP-1BSBF2 and L5B ARP-1BSBF2. As shown on the drawing, the fuse numbers were L5B/1967 and L6B/1967; he failed to include the Control Wire Diagram (CWD) sheet number designation of 1967 on the clearance. Two auxiliary operators were dispatched to the ARP to pull the fuses. The auxiliary operators understood the F2 designation to refer to the physical location of the fuses in the ARP. Plant vendor drawings showing the physical locations and layout of the fuse blocks within the ARP were not used. When the operators proceeded to ARP 1B-SB, they located fuses "5" and "6" in Front Rack 2 (F2) and assumed these to be the fuses to be pulled. These fuses are actually L5B/0803 and L6B/0803. This circuit enables the air supply to the Feedwater Regulating Valve for SG 'C'.

When the operators pulled the wrong fuses, it caused the Feedwater Regulating Valve for SG 'C' to shut, stopping feedwater flow to SG 'C'. This resulted in an automatic reactor/turbine trip at 1007 hours due to SG low-low level coincident with feedwater flow - steam flow mismatch.

Subsequent to the trip, both Main Feedwater Pumps tripped actuating the Auxiliary Feedwater System. This same anticipatory signal also initiated an isolation of SG Blowdown. Three SG blowdown valves did not shut as required and were manually isolated.

Prior to plant restart, it was determined that these valves would properly respond to a safety isolation signal. The logic for the Blowdown valve isolation is different based on the input signal. For the case of Blowdown Isolation on loss of both Main Feed Pumps signal or one Steam Generator with low-low level signal, the initiating signal to Blowdown isolation drops out after 5 seconds. The logic relies on the valves' control circuit to complete the valve closure. If less than full open indication is not obtained, the valve returns to the open position after the 5 second timer has expired. For the case of Blowdown isolation on Safety Injection signal or two Steam Generators with low-low level signal, the initiating signal is sealed in and assures Blowdown valve closure.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
SHEARON HARRIS PLANT UNIT 1	0 5 0 0 0 4 0 0	8 7	— 0 4 2	— 0 0	0 3 OF 0 4

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

DESCRIPTION (continued)

Blowdown Isolation on a loss of both Main Feedwater Pumps is an anticipatory signal which is not assumed in safety analysis and is not required. The failure of Blowdown isolation on loss of level in only one Steam Generator is bounded by FSAR Section 15.1.4 and 15.2.8 analyses (Steam Line Break and Feedwater Line Break Analyses). Blowdown isolation on only one Steam Generator Low-Low level signal is again only an anticipatory signal and is not required.

SG water levels were restored with the Auxiliary Feedwater System and the plant stabilized in Mode 3.

Following the event, an investigation was conducted into the cause of the event. This review found:

(1) The Control Wiring Diagram (CWD) correctly indicated the fuse numbers as L5B/1967 and L6B/1967, although the designation F2 led to confusion on the part of the operators who thought the fuses were located in Front Rack 2.

(2) The panel vendor drawing for ARP 1B-SB correctly illustrated that the correct fuses were located in Front Rack 1 in the panel and that the fuses pulled affected the C Main Feedwater Reg. valve.

(3) ARP 1B-SB included placards internal to the cabinet which included the CWD designation for each fuse. The placards were located adjacent to the fuse blocks but not in a direct line-of-sight from the front of the panel. Such placards were added to safety-related ARP's during construction in concert with revisions to the CWD's to include the CWD sheet number in the fuse designation.

(4) The personnel involved in the event were not aware of the significance of the CWD sheet number in the fuse number, and the fact that the "1BSBF2" designator was not meant to indicate the physical location of the fuses.

CAUSE

The cause of the event was determined to be personnel error. The error was caused by a lack of attention to detail and a lack of systematic training on locating fuses in ARP's.

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SHEARON HARRIS PLANT UNIT 1	0 5 0 0 0 4 0 0	8 7	— 0 4 2	— 0 0	0 4 OF 0 4

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

ANALYSIS:

No safety consequences resulted from this event other than a challenge to the Reactor Protection system and the Engineered Safety Features Actuation system. Plant safety systems responded as required, and the plant stabilized in Mode 3.

This event is being reported in accordance with 10CFR50.73(a)(2)(iv) as an Engineered Safety Features Actuation and an actuation of the Reactor Protection System.

CORRECTIVE ACTIONS:

1) Operator training has been conducted concerning fuse labeling conventions and correct methods of determining component locations within equipment panels.

CP&L

Carolina Power & Light Company

HARRIS NUCLEAR PROJECT
P.O. Box 165
New Hill, NC 27562

AUG 10 1987

File Number: SHF/10-13510C
Letter Number: HO-870482 (O)

U.S. Nuclear Regulatory Commission
ATTN: NRC Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1
DOCKET NO. 50-400
LICENSE NO. NPF-63
LICENSEE EVENT REPORT 87-042-00

Gentlemen:

In accordance with Title 10 to the Code of Federal Regulations, the enclosed Licensee Event Report is submitted. This report fulfills the requirement for a written report within thirty (30) days of a reportable occurrence and is in accordance with the format set forth in NUREG-1022, September, 1983.

Very truly yours,

R A Watson

R. A. Watson
Vice President
Harris Nuclear Project

RAW:lkd

Enclosure

cc: Dr. J. Nelson Grace (NRC - RII)
Mr. B. Buckley (NRR)
Mr. G. Maxwell (NRC - SHNPP)

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