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AUTH.NAME AUTHOR AFFILIATION
HOLIFIELD,C. Florida Power & Light Co.
SAGER,D.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-007-00:on 891214,1B3 4160V bus undervoltage relay fails surveillance due to equipment malfunction.

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FPL

JANUARY 16 1990

L-90-16
10 CFR 50.73

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

Gentlemen:

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 89-7
Date of Event: December 14, 1989
1B3 4160V Bus Undervoltage Relay Fails
Surveillance Due to Equipment Malfunction

Gentlemen:

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

DA Sager

D. A. Sager
Vice President
St. Lucie

DAS/GRM/rh

Attachment

cc: Stewart D. Ebneter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

IE22

NRC Form 366
(9-83)

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
ST. LUCIE, UNIT 1	0 5 0 0 0 3 3 5	1 OF 0 3

TITLE (4) 1B3 4160V BUS UNDERVOLTAGE RELAY FAILS SURVEILLANCE DUE TO EQUIPMENT MALFUNCTION

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)
									N/A	0 5 0 0 0
1 2	1 4	8 9	8 9	-- 0 0 7	-- 0 0	0 1	1 3	9 0		

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)							
POWER LEVEL (10)	1 0 0		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
			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
			20.405(a)(1)(iii)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		*Specify in Abstract below and in Text NRC Form 366A)*
			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
CHARLES D. HOLIFIELD, SHIFT TECHNICAL ADVISOR	AREA CODE 4 0 7 4 6 5 3 5 5 0

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

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
B	E B	R L Y	A 3 4 8	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)

ABSTRACT

On December 14, 1989 at 0155 with Unit 1 at 100% power, the 1B3 4160V undervoltage relay failed its monthly surveillance due to a faulted time delay unit. Technical Specification 3.3.2.1 action 12 requires that the inoperable undervoltage relay channel be placed in the tripped condition within one hour for continued operation. Since this required calling in a System Protection Representative to perform a Jumper/Lifted Lead, it took longer than one hour to place the channel in trip. However, a shutdown was not required since Technical Specification 3.0.3 allowed another hour prior to shutdown and it took less than two hours to install the jumper and confirm that the inoperable channel was in the tripped condition.

The root cause of the event was equipment failure in that the time delay unit failed to operate. Lack of procedural guidance for an action statement with a critical time limit compounded the event.

Corrective actions: Operations placed the inoperational undervoltage relay in the tripped condition. Electrical Maintenance replaced the faulted time delay unit. Electrical Maintenance and Operations will coordinate to add procedural guidance for installing a jumper to place a failed undervoltage channel in the tripped condition. Technical Staff will review the feasibility of changing Technical Specification Action Statements with critical time limits.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
ST. LUCIE, UNIT 1	0 5 0 0 0 3 3 5	8 9	0 0 7	0 0	0 2 OF 0 3

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

DESCRIPTION OF THE EVENT

On December 14, 1989 at 0155 with Unit 1 in Mode 1 at 100% power, a routine monthly functional test of degraded grid voltage was performed on the 1B3 4160V bus (EIIS:EB) by a utility non-licensed operator in accordance with Data Sheet 38 of Administrative Procedure 1-0010125, "Schedule of Periodic Tests, Checks and Calibrations." Undervoltage relays 27-1, 27-2, 27-3 and 27-4 and their associated contacts and time delay units tested satisfactory. At 0155, while testing undervoltage relay 27-5, the blue test lamp did not go out, indicating that time delay unit 2X-5/TPDU had failed.

Since the number of operable channels was one less than the total number of channels as specified in Table 3.3-3 of the Technical Specifications, action 12 of Technical Specification 3.3.2.1, which requires that the inoperable channel be placed in the tripped condition within one hour, was entered. At 0200 a System Protection Representative was called in and at 0230 arrived at the control room to provide assistance in placing the channel in the tripped condition. The System Protection Representative had the operators place Undervoltage Relay 27-5 in the "UV Relay Test" position at 0253. This switch position normally places the selected relay in the tripped condition. However, for a failed time delay unit, this does not work. At 0315 the System Protection Representative tested the circuit and discovered it to be in the untripped condition. At 0329, a Jumper/Lifted Lead request was prepared by the NPS and a Safety Evaluation was performed by the Shift Technical Advisor. After the jumper was installed, the System Protection Representative tested the circuit to confirm the failed channel to be in the tripped condition.

CAUSE OF THE EVENT

The root cause of the event was a failed time delay unit. With 2X-5/TPDU failed, contact 2X-5/1259 remained open and prevented operation of the undervoltage relay. Exceeding the one hour time limit of Technical Specification 3.3.2.1 was caused by lack of procedural guidance in Administrative Procedure 1-0010125 regarding how to put the inoperable channel in the tripped condition.

ANALYSIS OF THE EVENT

Since the inoperable channel was not in the tripped condition within one hour as required by Technical Specification 3.3.2.1, this event has been deemed reportable as per the requirements of 10CFR50.73 (a)(2)(i)(B), "any operation or condition prohibited by the plant's Technical Specifications." After the one hour allowed by action 12 had elapsed, Technical Specification 3.0.3, which requires initiation of a plant shutdown to hot standby to start within the next hour, applied. The combination of the two Technical Specification action statements allowed up to two hours operation prior to commencing a plant shutdown. Since the jumper was installed and the inoperable channel confirmed in the tripped condition in less than two hours, a plant shutdown was not necessary.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
ST. LUCIE, UNIT 1	0 5 0 0 0 3 3 5	8 9	-- 0 0 7	-- 0 0	0 3 OF 0 3

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

CORRECTIVE ACTIONS

1) Operations placed the inoperable undervoltage relay channel in the tripped condition by installing a jumper across contact 2X-5/1259.

2) Electrical Maintenance replaced the inoperable time delay unit 2X-5/TPDU.

3) Electrical Maintenance and Operations will coordinate to add procedural guidance to Administrative Procedure 1-0010125 and 2-0010125, "Schedule of Periodic Tests, Checks and Calibrations," for placing the undervoltage relay channels in the tripped condition.

4) Technical Staff will review the feasibility of changing the Technical Specifications to extend Action Statement 12 of Technical Specification 3.3.2.1 and other Action Statements with critical time limits.

ADDITIONAL INFORMATION

Failed Component Identification:

Component: AGASTAT Relay
Manufacturer: AMERACE Corporation
Model Number: DSCXX0125DPAXAA
Serial Number: 88480239

Previous Similar Events:

There have been no previous Licensee Event Reports involving 1B3 4160V undervoltaage relay surveillance failures due to equipment malfunction.