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FACIL:50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
HART,R.D. Florida Power & Light Co.
CONWAY,W.F. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-004-00:on 880408,Tech Spec action statement exceeded when 480 volt undervoltage relay failed during testing.

W/8 ltr.

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TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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NRC Form 366
(9-83)

LICENSEE EVENT REPORT (LER)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Turkey Point Unit 4	0 5 0 0 0 2 5 1	1 OF 0 3

TITLE (4) Technical Specification Action Statement Exceeded When 480 Volt Undervoltage Relay Failed During Periodic Testing

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
0 4	0 9	8 8	8 8	-	0 0 4	-	0 0	0 5	0 9	8 8	N/A	0 5 0 0 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 (Specify in Abstract below and in Text, NRC Form 366A)	
		20.405(a)(1)(iii)		X 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
	AREA CODE
Randall D. Hart, Licensing Engineer	3 0 5 2 4 6 - 6 5 5 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	
X	J E	R L Y	G 0 8 0	Y							
X	J E	R L Y	G 0 8 0	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)

On April 8, 1988, the requirements of Technical Specification (TS) Table 3.5-2, item 3.2.b were exceeded. During the performance of operating procedure (OP) 9404.2, 4160 volt and 480 volt switchgear - undervoltage test, the undervoltage protection circuit for the 4A 480 volt load center would not pass the test. This channel was declared out of service and maintenance was requested to investigate the failure. TS section 3.5, Table 3.5-2, item 3.2.b requires that for the 480V load centers, power operation may continue with one channel inoperable as long as the inoperable channel is placed in the tripped condition. Operations was unable to place the channel in the tripped condition. Therefore, the requirements of TS Table 3.5-2, item 3.2.b could not be met and Unit 4 was required to be placed into TS 3.0.1 which requires the unit to be in hot standby in 7 hours. Maintenance replaced relays 327TX/4A1 and 327TX/4A2, OP 9404.2 was recommenced and the replaced relays were satisfactorily tested. This took the unit out of TS 3.0.1. The cause of the event was failure of relays 327TX/4A1 and 327TX/4A2 in the undervoltage protection scheme for the 4A 480 volt load center. FPL's Engineering Department has been requested to evaluate this failure to determine root cause and appropriate corrective actions.

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EVENT:

On April 8, 1988, the requirements of Technical Specification (TS) Table 3.5-2, item 3.2.b were exceeded. At 1410 during the performance of operating procedure (OP) 9404.2, 4160 volt and 480 volt switchgear - undervoltage test, the undervoltage protection circuit for the 4A 480 volt load center would not pass the test. The red indicating light did not come on as required by the procedure. This channel was declared out of service and the Electrical Maintenance Department was requested to investigate the occurrence. They discovered that relays 327TX/4A1 and 327TX/4A2 had failed.

The circuit in which these relays are used utilizes a two-of-two logic to enable a non-safety injection degraded voltage trip received by both 327/*** relays (General Electric inverse-time type relay model IAV55C). Since this relay failed in an open-circuited condition (coil burned out), the trip position for that portion of the circuit could not be applied. While the IAV55C degraded voltage relay has provisions to place it in the trip mode via shorting bars to create a one-of-one trip logic scheme, no similar provision exits for the 327TX/4A1 and 327TX/4A2 auxiliary relays downstream in the circuit.

TS section 3.5, Table 3.5-2 (Engineered Safety Features Actuation), item 3.2.b requires that for the 480V load centers, power operation may continue with one channel inoperable as long as the inoperable channel is placed in the tripped condition. Since the design of the circuit does not allow the affected relays to be placed in the tripped condition, continued operation of Unit 4 was prohibited by TS Table 3.5-2, item 3.2.b. This placed Unit 4 into TS 3.0.1, which required the unit to be in hot standby within 7 hours. Electrical Maintenance replaced relays 327TX/4A1 and 327TX/4A2, OP 9404.2 was recommenced and the replaced relays were tested satisfactorily at 1650. This took the unit out of TS 3.0.1.

CAUSE OF EVENT:

The cause of the event was a failure of relays 327TX/4A1 and 327TX/4A2 in the undervoltage protection scheme for the 4A 480 volt load center and the inability to place the failed relay into the tripped condition to meet TS action statement requirements. These relays failed due to an open circuited coil. The cause of the relay failure is still under investigation by power plant engineering. The preliminary investigations have not identified any clear failure mechanism for the failed relays.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Turkey Point Unit 4	0 5 0 0 0 2 5 1	8 8	— 0 0 4	— 0 0	0 3 OF 0 3

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

ANALYSIS OF EVENT:

Upon identification of the failure, the affected relays were replaced and returned to service before a unit shutdown was commenced. FPL's Engineering Department has been requested to evaluate this failure to determine root cause, appropriate corrective actions and the safety significance of this event. Should this evaluation significantly change the information provided in this LER, a LER update will be sent accordingly.

CORRECTIVE ACTIONS:

1) Relays 327TX/4A1 and 327TX/4A2 were replaced and satisfactorily tested before a unit shutdown was commenced.

2) FPL's Engineering Department has been requested to evaluate this concern to assist in identifying the root cause and appropriate corrective actions. This effort will proceed in accordance with the Integrated Schedule (IS). This schedule for completion is currently being reviewed to determine if enhancements can be made.

ADDITIONAL DETAILS:

The affected relay is manufactured by General Electric and is model number CR120BD04341.

Similar Occurrences: LER 251-87-013 reported a similar failure of a 480 volt load center undervoltage relay on the 4C 480 volt load center.

P. O. BOX 14000, JUNO BEACH, FL. 33408-0420

FPL

MAY 0 9 1988

L-88-204
10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Unit 4
Docket No. 50-251
Reportable Event: 88-04
Date of Event: April 9, 1988
Technical Specification Action Statement
Exceeded When 480 Volt Undervoltage Relay
Failed During Periodic Testing

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

Very truly yours,

W. F. Conway
Acting Group Vice President
Nuclear Energy

WFC/SDF/gp

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator,
Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

SDF4.LER

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