NRC Form 366
(9-83)

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

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
Engineered Safety Feature Actuation - Reactor Trip

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 9	2 0	8 4	8 4	0 2 1	0 1	0 4	0 1	8 5	N/A	0 5 0 0 0

OPERATING MODE (9)	N	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)	X	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)		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)
R. D. Hart, Licensing Engineer	3 0 5 2 4 5 - 2 9 1 0

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	E F	F U	S 1 5 6	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)

UPDATED REPORT

On September 20, 1984, while Unit 4 was at 100% power, a turbine runback and subsequent reactor trip occurred. During an investigation for a ground in the 3A DC bus, the "normal" (4A) static inverter (4Y01) tripped due to a blown fuse. The 4A inverter was in service supplying power to a vital 120 volt (a.c.) instrument bus (panel 4P07). The 4A inverter failure resulted in a loss of power to vital panel 4P07 which caused nuclear instrumentation system (NIS) channel N-42 to generate an "NIS ROD DROP" signal causing a turbine runback to 70% power. Following the turbine runback, a reactor trip occurred when the reactor protection logic of steam flow greater than feed flow, coincident with steam generator low level for the "B" steam generator was made up. Immediate corrective actions included stabilizing the unit and re-energizing vital panel 4P07. Long term corrective action is to replace the inverters to ensure a more reliable power supply. All equipment functioned as designed on initiation of the engineered safety feature actuation signal (ESFAS) generated in the reactor protection system. The health and safety of the public were not affected. Similar occurrences: LER 251-84-011.

IE22
1/1

NRC Form 366
(9-83)

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

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

UPDATED REPORT

On September 20, 1984, at 5:45 p.m., while Unit 4 was at 100% power, a turbine runback to 70% power occurred, followed by a reactor trip. During an investigation for a ground in the 3A DC bus, the "normal" (4A) static inverter (4Y01) tripped due to a blown fuse. The 4A inverter was in service supplying power to a vital 120 volt (a.c.) instrument bus (panel 4P07). The 4A inverter failure resulted in a loss of power to vital panel 4P07 and its feeds to the nuclear instrumentation system (NIS) channel N-42 power range nuclear instrumentation. A loss of NIS channel N-42 detector voltage resulted and initiated an "NIS ROD DROP" signal which generated the turbine runback. A reactor trip occurred when the reactor protection logic of steam flow greater than feed flow, coincident with steam generator low level for the "B" steam generator was made up.

When the 4A inverter failed, an attempt was made to transfer vital panel 4P07 to the "standby" (AS) static inverter (3Y04) but that inverter failed also. Electrical personnel investigated the failure of the inverters and found a blown fuse for both the 4A and AS inverters. The fuse for the AS inverter was replaced and an attempt was made to re-energize the AS inverter but the fuse blew again. A new fuse was placed in the AS inverter and the logic outputs were checked as per the Manufacturer's Maintenance Manual and found to be within specifications. The AS inverter was energized as per Operating Procedure (OP) 9700.1, Instrument AC Power Supply -Operation of Normal and Spare Inverters, and the inverter developed rated voltage.

The fuse for the 4A inverter was replaced and the logic outputs were checked as per the Manufacturer's Maintenance Manual and found to be within specifications. The 4A inverter was energized in accordance with OP 9700.1 and the 4A inverter developed rated voltage. The 4A inverter was then loaded by connecting it to vital panel 4P07. The 4A inverter picked up the load in normal fashion. After the AS inverter was placed back in service, the loads on the 4A inverter were transferred to the AS inverter and Unit 4 was returned to service on September 21, 1984, at 6:39 a.m., with the AS inverter in service and the 4A inverter in standby. This was done so further investigations into the cause of 4A inverter failure could be made. These investigations discovered a wiring error in the input filter circuit for the 4A inverter. The error has since been corrected. This error allowed the circuit to be more susceptible to DC bus problems. This condition is believed to be the cause of the blown fuse in the 4A inverter. Investigations into the cause of the blown fuse in the AS inverter revealed that the probability of picking up the load of a dead vital panel with the AS or the 4A inverter is about 50%. The most probable cause of the inverter failure upon connection to a dead panel is a malfunction of the logic circuit. This causes a short across the DC input and results in a blown fuse. To prevent this from occurring, until the inverters are replaced, Off-Normal Operating Procedures for loss of instrument AC (ONOP 003.6 - 003.9) instruct the operators to open all the breakers of a vital panel before loading it on the inverter. The breakers are then individually closed with five second delays between closures.

FPL

FLORIDA POWER & LIGHT COMPANY

MAR 29 1985

L-85-126

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

Gentlemen:

Re: Reportable Event 84-021, Revision 1
Turkey Point Unit 4
Date of Event: September 20, 1984
Engineered Safety Feature Actuation-Reactor Trip

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

Very truly yours,

for C. Cowley
J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/SAV/js

Attachment

cc: Dr. J. Nelson Grace, Region II, USNRC
Harold F. Reis, Esquire
File 933.1

IE22
1/1