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 2	1 2	8 4	8 4	–	0 0 1	–	0 0	0 3	1 3	8 4	N/A	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)					
N		20.402(b)	20.405(c)	X	50.73(a)(2)(iv)		73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)		73.71(c)
1 0 0		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
Paul A. Roach, Regulation and Compliance 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 A	3	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 February 12, 1984, a reactor trip occurred. The root cause was determined to be due to an electrical relay malfunction which resulted in loss of power to a non-safety related 4160 volt bus and occurred during attempts to power another non-safety related 4160 volt bus from its alternate power supply. This de-energized the 4160 volt power supply to a steam generator (S/G) feedwater pump. The reduced feedwater flow transient resulted in a reactor trip on Reactor Protection System logic - "Steam Flow/Feedwater Flow Mismatch" coincident with "Low 'A' S/G Water Level". All equipment functioned as designed on initiation of the Engineered Safety Feature Actuation Signal (ESFAS). Immediate corrective actions included a design review and completion of satisfactory testing of the automatic turbine governor runback logic circuitry to verify that a runback is initiated on loss of a S/G feedwater pump. Long term corrective actions will be addressed in LER 251-84-003. The health and safety of the public were not affected. Similar occurrences: None.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

On February 12, 1984, at 9:45 a.m., the Unit 4 reactor tripped from 100% power. The root cause was determined to be due to a malfunction of an electrical synchronism-check relay which did not prevent the erroneous closure of a de-energized 4160 volt bus feeder breaker (4AC01) onto the energized non-safety related 4C 4160 volt bus. Bus protection relaying opened the energized 4C 4160 volt bus normal feeder breaker (4AC16) and de-energized the 4C bus and its power supply to the 4B steam generator (S/G) feedwater pump. The reduced feedwater flow transient resulted in a reactor trip on Reactor Protection System (RPS) logic -"Steam Flow/Feedwater Flow Mismatch" (1/2 channels) coincident with "Low 'A' S/G Water Level" (1/3 S/Gs).

The synchronism-check relay functions to check the voltage and phase-angle of the 4C 4160 volt bus (running voltage) against that of the selected 4C 4160 volt bus feeder breaker (incoming voltage) to prevent closure of the breaker if the voltage and phase-angle differences exceed design setpoints. The failure of the synchronism-check relay to prevent closure of the de-energized feeder breaker (4AC01), which was closed in error during attempts to power the non-safety related 3C 4160 volt bus from its alternate power supply (3AC01 was the correct breaker to be closed), resulted in de-energizing the 4C 4160 volt bus which ultimately resulted in the reactor trip.

The loss of a S/G feedwater pump above 70% power initiates an automatic turbine governor runback. However, anytime the oil pressure setting of the turbine load limit valve is below that of the turbine governor valve, the runback feature will not actually reduce turbine load until the governor valve oil pressure drops below the load limit valve oil pressure. Information gathered during the post trip review indicates that the turbine did not runback and reduce load. This was determined to be due to the governor valve oil pressure being above that of the load limit valve as described above. In the future, the turbine governor valve oil pressure normally will be maintained below that of the load limit valve unless control oil problems necessitate otherwise.

Additional information regarding this event will be presented and addressed in LER 251-84-003. All equipment functioned as designed on initiation of the Engineered Safety Feature Actuation signal generated in the RPS. Following completion of the post trip review, having identified no other problems, the unit evolution - hot shutdown to power operation commenced.

FLORIDA POWER & LIGHT COMPANY

March 13, 1984
PNS-LI-84-93

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

Gentlemen:

Re: Reportable Event 84-01
Turkey Point Unit 4
Date of Event: February 12, 1984
Engineered Safety Feature - 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,

J.W. Williams, Jr.
Vice President
Nuclear Energy

JWW/PLP:js

Attachment

cc: J.P. O'Reilly, Region II, USNRC
Harold F. Reis, Esquire
File 933.1

IE22
1/1

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