

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8708140133 DOC. DATE: 87/08/11 NOTARIZED: NO DOCKET #  
 -FACIL: 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251  
 AUTH. NAME AUTHOR AFFILIATION  
 WAGER, V. Florida Power & Light Co.  
 WOODY, C. O. Florida Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-019-00: on 870712, turbine runback from 89% reactor power to 84% reactor power caused by spurious spiking in rod position indication sys. Faulty solder joint repaired & signal conditioners inspected. W/870811 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

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NRR/PMAS/ILRB	1 1	<u>REG FILE</u> 02	1 1
RES DEPY GI	1 1	RES TELFORD, J	1 1
RES/DE/EIB	1 1	RGN2 FILE 01	1 1
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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Turkey Point 4										DOCKET NUMBER (2) 0 5 0 0 0 2 5 1										PAGE (3) 1 OF 1				
TITLE (4) Turbine Runback Caused By Spurious Spiking In The Rod Position Indication System Resulting From A Loose Solder Joint In The Cable Connector To The Signal Conditioner For Rod E-5																								
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8) Rod E-5														
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES						DOCKET NUMBER(S)									
0	7	1	2	8	7	8	7	0	1	9	0	0	0	8	1	1	8	7	N/A					
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																					
1			20.402(b)				20.406(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)									
POWER LEVEL (10)			20.406(a)(1)(i)				50.38(c)(1)				50.73(a)(2)(v)				73.71(c)									
8 9			20.406(a)(1)(ii)				50.38(c)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)									
			20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(vii)(A)													
			20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(vii)(B)													
			20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)													
LICENSEE CONTACT FOR THIS LER (12)																								
NAME										TELEPHONE NUMBER														
Viril Wager, Licensing Engineer										3 0 5 2 4 6 7 6 4 7 6														
COMPLETE ONE LINE FOR EACH COMPONENT DESCRIBED IN THIS REPORT (13)																								
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs														
B	J	D	I	U		M	0	3	5	No														
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)				MONTH		DAY		YEAR						
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO														

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

At 0412, July 12, 1987, Unit 4 experienced a momentary turbine runback from 89 percent reactor power (603 MWe) to 84 percent reactor power (559 MWe). The runback was caused by a spurious spike in the Rod Position Indication (RPI) System. The RPI/Turbine logic armed the Condenser Steam Dumps and initiated the turbine runback. Operations personnel performed procedures 4-ONOP-089, Turbine Runback; 4-ONOP-028, Reactor Control System Malfunction, and stabilized the unit. The RPI was checked and a Quadrant Power Tilt Ratio was calculated to insure there was no dropped rod. Approximately 1.5 hours after the runback at 0542, the Rod Bottom Light actuated for Rod E-5, in Shut Down Bank B. The operators performed procedure 4-ONOP-028, Reactor Control System Malfunction and re-verified there was no dropped rod. Three minutes later at 0545, the Rod Bottom Light cleared. The investigation conducted by the Instrument and Control department revealed a loose solder joint in the cable connector to the signal conditioner for Rod E-5. The spiking in the RPI system was duplicated by shaking the solder joint. The faulty solder joint was repaired and the other signal conditioners in the RPI system were inspected and found to be in good condition. The unit was returned to 90 percent power at 1425, July 12, 1987.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Turkey Point 4	DOCKET NUMBER (2)  0   5   0   0   0   2   5   1	LER NUMBER (8)				PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER				
		8   7	—   0   1   9	—   0   0	0   2	OF	0   3	

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

EVENT

On July 12, 1987, Unit 3 was in Mode 5 and Unit 4 was in Mode 1 at 89 percent reactor power, 603 MWe. At 0412, on July 12, Unit 4 experienced a momentary Turbine runback caused by a failure in the Rod Position Indication (RPI) system. The spike lasted approximately 3.5 seconds. The RPI/Turbine runback logic armed the Condenser Steam Dumps and initiated the turbine runback. Power level was stabilized at 84 percent (559 MWe). Operations personnel performed procedures 4-ONOP-089, Turbine Runback, and 4-ONOP-028, Reactor Control System Malfunction. Due to the possibility of another RPI runback, the reactor dropped rod protection was switched to the Nuclear Instrumentation System (NIS) mode after the unit was stabilized. A quadrant power tilt ratio was calculated and showed no significant change. The RPI was checked to insure there was no dropped rod. Approximately 1.5 hours after the runback, at 0542, Shut Down Bank (SDB) B, Rod E-5, RPI Rod Bottom Light actuated. The operators performed 4-ONOP-028, Reactor Control System Malfunction and verified that there was no dropped rod. Three minutes later at 0545, the rod bottom light cleared. At 1425, July 12, after completion of necessary repairs, load increase to 90 percent power commenced at 3 percent ramp rate, and the reactor dropped rod protection was returned to the normal RPI mode.

CAUSE OF EVENT

The investigation conducted by the Instrument and Control (I&C) department revealed a loose solder joint in the connector to the signal conditioner for Rod E-5. The loose solder joint at the signal conditioner for Shut Down Bank B, Rod E-5 caused an intermittent Rod Bottom signal for Rod E-5. The condition in the RPI was duplicated by shaking the solder joint. The intermittent Rod Bottom signal produced a dropped rod effect in the RPI/Turbine runback logic and actuated the momentary turbine runback.

ANALYSIS OF EVENT

Operations personnel verified that there was no dropped rod. The alternate reactor dropped rod protection, the NIS, was selected and the reactor power was limited below that level requiring rod drop protection during the period corrective action was being taken on the RPI system. The system responded as designed. Based on the above the health and safety of the public were not affected.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Turkey Point 4	0 5 0 0 0 2 5 1	8 7	0 1 9	0 0	0 3	OF	0 3

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

CORRECTIVE ACTIONS

- 1) Operations personnel stabilized the unit at 84 percent power.
- 2) Operations personnel performed the following procedures to insure there was no dropped rod:
  - Turbine Runback Procedure, 4-ONOP-089
  - Reactor Control System Malfunction, 4-ONOP-028
  - Calculated a quadrant power tilt ratio
- 3) Instrument and Control department personnel repaired the loose solder joint at the signal conditioner for SDB B, Rod E-5.
- 4) I&C department personnel checked the signal conditioners for the other RPI's. No other defective connectors were found.

ADDITIONAL DETAILS

Manufacturer: Magnetics Inc., Kemco Division, ref drawing KC-10767-E2784  
Similar Occurrences: none



AUGUST 11 1987

L-87-330  
10 CFR 50.73

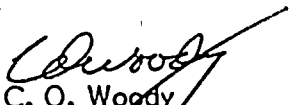
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Gentlemen:

Re: Turkey Point Unit 4  
Docket No. 50-251  
Reportable Event: 87-19  
Date of Event: July 12, 1987  
Turbine Runback Caused by Spurious Spiking In The Rod Position  
Indication System Resulting From A Loose Solder Joint In  
The Cable Connector To The Signal Conditioner for Rod E-5

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,

  
C. O. Woody  
Group Vice President  
Nuclear Energy

COW/SDF/gp

Attachment

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

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