

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8810170011 DOC.DATE: 88/10/05 NOTARIZED: NO. DOCKET #  
 FACIL:50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251  
 AUTH.NAME AUTHOR AFFILIATION  
 SALAMON,G. Florida Power & Light Co.  
 CONWAY,W.F. Florida Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-012-00:on 880905,turbine runback & quadrant power  
 tilt ratio deviation requiring flux trip reset.W/881005 ltr.  
 W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

## NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL		RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD2-2 LA	1 1		PD2-2 PD	1 1
	EDISON,G	1 1			
INTERNAL:	ACRS MICHELSON	1 1		ACRS MOELLER	2 2
	ACRS WYLIE	1 1		AEOD/DOA	1 1
	AEOD/DSP/NAS	1 1		AEOD/DSP/ROAB	2 2
	AEOD/DSP/TPAB	1 1		ARM/DCTS/DAB	1 1
	DEDRO	1 1		NRR/DEST/ADS 7E	1 0
	NRR/DEST/CEB 8H	1 1		NRR/DEST/ESB 8D	1 1
	NRR/DEST/ICSB 7	1 1		NRR/DEST/MEB 9H	1 1
	NRR/DEST/MTB 9H	1 1		NRR/DEST/PSB 8D	1 1
	NRR/DEST/RSB 8E	1 1		NRR/DEST/SGB 8D	1 1
	NRR/DLPQ/HFB 10	1 1		NRR/DLPQ/QAB 10	1 1
	NRR/DOEA/EAB 11	1 1		NRR/DREP/RAB 10	1 1
	NRR/DREP/RPB 10	2 2		NRR/DRIS/SIB 9A	1 1
	NUDOCS-ABSTRACT	1 1		<u>REG FILE</u> 02	1 1
	RES TELFORD,J	1 1		RES/DSIR DEPY	1 1
	RES/DSIR/EIB	1 1		RGN2 FILE 01	1 1
EXTERNAL:	EG&G WILLIAMS,S	4 4		FORD BLDG HOY,A	1 1
	H ST LOBBY WARD	1 1		LPDR	1 1
	NRC PDR	1 1		NSIC HARRIS,J	1 1
	NSIC MAYS,G	1 1			

TOTAL NUMBER OF COPIES REQUIRED: LTTR 46 ENCL 45

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## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Turkey Point Unit 4										DOCKET NUMBER (2) 0 5 0 0 0 2 5 1 1 OF 0 4										PAGE (3) 1 OF 0 4	
TITLE (4) Turbine Runback and Consequent Quadrant Power Tilt Ratio Deviation Requiring High Flux Trip Reset Due to Dropped Control Rod																					
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 N/A					DOCKET NUMBER(S) 0 5 0 0 0							
0 9	0 5	8 8	8 8	0 1 2	0 0	1 0	0 5	8 8						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)																			
1		20.402(b)				20.406(e)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)							
POWER LEVEL (10)		20.406(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)							
1 0 0		20.406(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vi)				<input checked="" type="checkbox"/> 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)				Tech Spec 6.9.3(1)							
		20.406(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)											
		20.406(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)											
LICENSEE CONTACT FOR THIS LER (12)																					
NAME Gabe Salamon, Compliance Engineer										TELEPHONE NUMBER AREA CODE 3 0 5 2 4 6 - 6 5 6 0											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD											
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)

On September 5, 1988 Unit 4 was operating at 100% power. At 0012, control rod K-12 dropped from 228 steps to 0 step, causing a turbine runback to 60% power. At 0055, power reduction to below 50% power, in accordance with Technical Specifications, was initiated. This was completed at 0123; and an Event Response Team (ERT) was formed at 0200. Hourly calculations of Quadrant Power Tilt Ratios (QPTR) were initiated at 0100. The readjustment of the neutron high flux trip setpoints to 55% was completed at 0345. Following investigation of the cause of the dropped rod with no deficiencies having been identified, control rod K-12 was recovered at 0640. A flux map was completed at 0800, verifying control rod K-12 was fully withdrawn. On September 6, QPTR was calculated to be 1.9%. As QPTR was below 2%, the hourly QPTR calculations were terminated. At 1430, a flux map was completed, indicating an acceptable upper tilt of .76%, an acceptable lower tilt of .79%, and satisfactory peaking factors. At 2210, with the axial flux difference within the target band, an increase to above 50% reactor power was commenced. A recorder was connected to the control circuitry of rod K-12 to determine the cause of the dropped rod if it were to drop again. An inspection of control rod K-12 with repairs as necessary, will be performed during the current refueling outage.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

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

EVENT

On September 5, 1988 Unit 4 was operating at 100% power. At 0012, control rod K-12 (EIIS:JD) in control bank C dropped from 228 steps (fully withdrawn position) to 0 steps (fully inserted position), illuminating the appropriate rod-bottom light. The dropped rod caused an immediate turbine runback to 60% reactor power. The C Steam Generator (SG) Feedwater Control Valve (FCV) (EIIS:JB) was responding slowly to the runback, and was switched to manual. When it was switched back to auto, it drove shut and had to be reopened again in manual.

At 0055, a power reduction to below 50% power, in accordance with Technical Specification (TS) 3.2.6.f.2, which states that the axial flux deviation may exceed +/-5%, for a maximum of 60 effective minutes, was initiated. The power reduction to below 50% was completed at 0123, and an Event Response Team (ERT) was formed at 0200.

Hourly calculations of Quadrant Power Tilt Ratios (QPTR) were initiated at 0100, in accordance with procedure 0-ADM-021, "Technical Specification Implementation Procedure." At 0125 the upper and lower QPTR were calculated to be 11.85% and 14.4%, respectively, however as power was already reduced to below 50%, no additional actions were necessary to comply with TS 3.2.6.h. At 0240, Instrumentation and Controls commenced the readjustment of the neutron high flux trip setpoints to 55%, in accordance with TS 3.2.6.f.2. This was completed at 0345.

Following investigation of the cause of the dropped rod with no deficiencies having been identified, recovery of control rod K-12 was commenced at 0541, and completed at 0640. A flux map to determine hot channel factors was completed at 0800 and the results verified that control rod K-12 was fully withdrawn. At 2210, an evaluation of the flux map determined that the incore flux tilt was 7%.

On September 6, 1988 at 0700, QPTR was calculated to be 1.9%. At 0800 and 0900, QPTR was calculated to be 1% and 1.1% respectively. As QPTR was now below 2% and therefore satisfactory, the hourly QPTR calculations were terminated. At 1430, a flux map was completed, indicating an acceptable upper tilt of .76% and an acceptable lower tilt of .79%. The peaking factors were also satisfactory.

At 2000 on September 5, 1988 the axial flux difference was within the target band. At 2210 on September 6, the neutron high flux trip setpoints were reset to 108%, and in compliance with TS 3.2.6.g.2, an increase to above 50% reactor power was commenced. The unit reached 100% power at 0910 on September 7, 1988.

CAUSE OF EVENT

In order to determine the cause of the dropped rod, the control rod circuitry was examined. No blown fuses were found. Resistance checks of the stationary gripper

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

coils and meggering of cable insulation identified no deficiencies. The waveforms on the lift, movable, and stationary coils were monitored during the rod recovery, with satisfactory results. A recorder was connected to monitor control rod K-12 on a continuous basis, in order to assist in identifying the cause of the dropped rod if control rod K-12 again dropped. Unit 4 is currently in a refueling outage. An inspection will be performed during this outage to investigate the cause of the dropped rod.

The observed QPTR and axial flux deviations are due to the dropped control rod.

The cause of the feedwater control valve problems will be determined when the valve is examined during the current refueling outage.

#### ANALYSIS OF EVENT

Upon initiation of the RPI rod bottom signal, a turbine runback was automatically initiated as designed. Reactor Coolant System and secondary system parameters responded as expected for this type of event, with the exception of the C SG FCV, which responded as discussed above. The QPTR and axial flux deviations observed during this event were as expected for an event of this type. Based on the above, the health and safety of the public were not affected.

This report also meets the reporting requirements of Technical Specification 6.9.3(1).

#### CORRECTIVE ACTIONS

- 1) An Event Response Team was formed.
- 2) Control rod K-12's coils and cable were checked to determine the cause of the dropped rod, with no malfunctions being identified.
- 3) A recorder was connected to the control circuitry of rod K-12 to determine the cause of the dropped rod if control rod K-12 were to drop again.
- 4) The vendor (Westinghouse) was contacted in order to determine inspections and checks which could be performed during the current refueling outage.
- 5) An inspection of control rod K-12 with repairs as necessary, taking into consideration the vendor's recommendations, will be performed during the current refueling outage.
- 6) An inspection of the C SG FCV, and repairs as necessary, will be performed during the current refueling outage.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

ADDITIONAL INFORMATION

Similar occurrences: a previous turbine runback due to a dropped rod was identified in LER 250-88-01.



OCTOBER 5 1988

L-88-437  
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: 88-12  
Date of Event: September 5, 1988  
Turbine Runback and Consequent Quadrant  
Power Tilt Ratio Deviation Requiring  
High Flux Trip Reset Due to Dropped Control Rod

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,

A handwritten signature in dark ink, appearing to read "W. F. Conway", is written over the typed name.

W. F. Conway  
Senior Vice President - Nuclear

WFC/RHF/gp

Attachment

cc: Malcolm L. Ernst, Acting Regional Administrator,  
Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant

Handwritten initials "IE22" with a vertical line and the number "11" below them.