

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9211030321 DOC. DATE: 92/10/29 NOTARIZED: NO DOCKET #  
 FACIL: 50-251 Turkey Point Plant, Unit 4, Florida Power and Light Co. 05000251  
 AUTH. NAME AUTHOR AFFILIATION  
 KNORR, J.E. Florida Power & Light Co.  
 PLUNKETT, T.F. Florida Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-007-00: on 920929, AFW actuation occurred. Caused by loss of suction pressure to main feedwater pump. Procedures re condensate polisher sys revised. W/921029 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: NRR RAGHAVAN, L

05000251 /

	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
	PD2-2 LA	1 1	PD2-2 PD	1 1
	AULUCK, R	1 1		
INTERNAL:	ACNW	2 2	AEOD/DOA	1 1
	AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
	NRR/DET/EMEB 7E	1 1	NRR/DLPQ/LHFB10	1 1
	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB	1 1
	NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
	NRR/DST/SICB8H3	1 1	NRR/DST/SPLB8D1	1 1
	NRR/DST/SRXB 8E	1 1	<del>REG FILE</del> 02	1 1
	RES/DSIR/EIB	1 1	RGN2 FILE 01	1 1
EXTERNAL:	EG&G BRYCE, J.H	2 2	L ST LOBBY WARD	1 1
	NRC PDR	1 1	NSIC MURPHY, G.A	1 1
	NSIC POORE, W.	1 1	NUDOCS FULL TXT	1 1
NOTES:		1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK.  
 ROOM P1-37 (EXT. 504-2065) TO ELIMINATE YOUR NAME FROM DISTRIBUTION  
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED  
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 30 ENCL 30

*Handwritten signature/initials*





FPL

P.O. Box 029100, Miami, FL, 33102-9100

OCT 28 1992

L-92-294  
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: 92-007-00  
Automatic Auxiliary Feedwater Start on Main Feedwater  
Pump Trip

The attached Licensee Event Report 251-92-007-00 is being provided in accordance with 10 CFR 50.73 (a) (2) (iv).

If there are any questions please contact us.

Very truly yours,

T. F. Plunkett  
Vice President  
Turkey Point Nuclear

TFP/JEK/jk

enclosure

cc: Stewart D. Ebnetter, Regional Administrator, Region II,  
USNRC  
Ross C. Butcher, Senior Resident Inspector, USNRC, Turkey  
Point Plant

03000  
9211030321 921029  
PDR ADOCK 05000251  
S PDR

an FPL Group company



# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <div style="text-align: center;">TURKEY POINT UNIT 4</div>	DOCKET NUMBER (2) 05000251	PAGE (3) 1 OF 4
---	-------------------------------	--------------------

TITLE (4) Automatic Auxiliary Feedwater Start on Main Feedwater Pump Trip

EVENT DATE (5)			LER NUMBER(6)			RPT DATE (7)			OTHER FACILITIES INV. (8)	
MON	DAY	YR	YR	SEQ #	R#	MON	DAY	YR	FACILITY NAMES	DOCKET # (5)
09	29	92	92	007	00	10	29	92	TURKEY POINT UNIT 3	05000250

OPERATING MODE (9)	2	<u>THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § 10 CFR 50.73(a)(2)(iv)</u>
POWER LEVEL (10)	2%	

LICENSEE CONTACT FOR THIS LER (12)

James E. Knorr, Licensing Engineer	TELEPHONE NUMBER
	305-246-6757

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?
X	BA	33	E081	N					

SUPPLEMENTAL REPORT EXPECTED (14) NO <input checked="" type="checkbox"/> YES <input type="checkbox"/>	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
(if yes, complete EXPECTED SUBMISSION DATE)				

ABSTRACT (16) On September 29, 1992, Turkey Point Unit 4 was in Mode 2 at 2% reactor power. At 1450 EST, during the performance of a condensate polisher backwash, an automatic auxiliary feedwater (AFW) actuation occurred. During the backwash evolution, the inlet valve (CV-4-6351D), on the 4D condensate polisher, opened causing the main feedwater pump suction pressure to drop. The pressure drop occurred because the open inlet valve (CV-4-6351D) allowed the main feedwater pump suction pressure to be relieved through the 4D polisher vent valve (CV-4-6353D) to the backwash receiver tank which is kept at atmospheric pressure. The reduced suction pressure on the 4A main feedwater pump caused a pump trip. This pump trip resulted in the automatic start of the in-service auxiliary feedwater pumps and isolation of steam generator blowdown. At 1520 EST the 'A' standby feedwater pump was started to supply feedwater to the steam generators and the auxiliary feedwater pumps were placed in standby. Other than the automatic start of the auxiliary feedwater pumps no manual or automatic reactor protection system or engineered safety feature actuations occurred or were required.

The NRC was originally notified of this event in accordance with 10 CFR 50.72 (b) (2) (ii).



# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	92-007-00	02 OF 04

## I. EVENT DESCRIPTION

On September 29, 1992, Turkey Point Unit 4 was in Mode 2 at 2% reactor power. At 1450 EST, during the performance of a condensate polisher backwash, an automatic auxiliary feedwater (AFW) actuation occurred. During the backwash evolution, the inlet valve (CV-4-6351D) (EIIS-SF, IEEE-V), on the 4D condensate polisher (EIIS-SF, IEEE-DM), opened causing the main feedwater pump suction pressure to drop. This main feedwater pump suction pressure drop occurred because the open inlet valve (CV-4-6351D) allowed the pressure to be relieved through the 4D polisher vent valve (EIIS-SF, IEEE-V) (CV-4-6353D) to the backwash receiver tank (EIIS-SF, IEEE-TK) which is kept at atmospheric pressure. As a result of this pressure drop, the following expected actions occurred. The reduced suction pressure on the 4A main feedwater pump (EIIS-SJ, IEEE-P) caused a pump trip. This pump trip resulted in the automatic start of the A and C in-service auxiliary feedwater pumps (the B AFW pump was out of service for post maintenance testing) (EIIS-BA, IEEE-P) and isolation of steam generator blowdown (EIIS-SB). At 1520 EST the AFW system was returned to the standby condition. Other than the automatic start of the auxiliary feedwater pumps no manual or automatic reactor protection system or engineered safety feature actuations occurred or were required.

The NRC was notified of this event in accordance with 10 CFR 50.72 (b) (2) (ii) at 1845 EDT, September 29, 1991.

## II. EVENT CAUSE

### a. Immediate Cause

The immediate cause of the automatic start of the AFW pumps was the trip of the 4A main feedwater pump upon loss of suction pressure.

- b. The loss of suction pressure to the main feedwater pump was caused by the diversion of condensate flow to the "D" polisher vessel, through the open inlet valve (CV-4-6351D) and out the vessel vent valve (CV-4-6353D) to the backwash receiver. The root cause for this flow path to be established was the malfunction of a limit switch on CV-4-6351D. This failure resulted in a logic fault allowing the diversion of the condensate flow. During subsequent inspection of other valves in this non-safety related system, some valves and limit switches in need of preventative maintenance were identified. The maintenance work has been planned and prioritized. The control system for the condensate polisher appeared to function properly.





# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME DOCKET NUMBER LER NUMBER PAGE NO.  
TURKEY POINT UNIT 4 05000251 92-007-00 03 OF 04

## III. EVENT SAFETY ANALYSIS

The condensate polisher (demineralizer) system is a non-safety related system used to improve the purity of condensate water for use in the steam generators by removal of dissolved and suspended solids from the condensate water. In this event, suction pressure was reduced resulting in a trip of the operating 4A main feedwater pump. The trip of the main feedwater pump and the subsequent loss of the main feedwater supply is a previously analyzed event. As a result of these analyses, plant procedures were developed to provide operator guidance in response to such a transient. The procedures and plant design assure that the plant is stabilized in a safe condition in accordance with the plant Technical Specifications. For this event, steam generator water levels were maintained within design operating levels by the automatic start of the auxiliary feedwater system. A standby feed water pump was subsequently started and the auxiliary feedwater pumps were secured and returned to their standby condition in accordance with plant procedures.

During the event, the 'B' auxiliary feedwater pump was out of service for required post maintenance testing prior to return to service. Other than the automatic start of the auxiliary feedwater pumps no manual or automatic reactor protection system or engineered safety feature actuations occurred or were required. Engineered safety features were designed to prevent by anticipation or by reducing the severity through quick automatic response, events that could affect the health and safety of the public.

Based upon the above, the health and safety of plant personnel and the general public were not compromised as a result of the loss of main feedwater and automatic start of the auxiliary feedwater systems.

## IV. CORRECTIVE ACTIONS

### a. Immediate Corrective Action

The 'A' standby feedwater pump was started and used to supply feedwater to the steam generators. This feedwater supply allowed the auxiliary feedwater pumps to be placed in standby.

### b. Corrective Actions to Prevent Recurrence

1. The condensate polisher system valves and operators were walked down in detail to determine needed component repairs or replacement. Appropriate work orders for identified needs were written. Work required to return the system to operation was completed.

2. Procedure OP-7001.3, Condensate Polishing System - Powdex Vessel Operation, was revised to require manual control of inlet and outlet valves to prevent inadvertent opening of the vessel inlet or outlet valves. Further investigation may require other appropriate corrective actions.



# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	92-007-00	03 OF 04

### III. EVENT SAFETY ANALYSIS

The condensate polisher (demineralizer) system is a non-safety related system used to improve the purity of condensate water for use in the steam generators by removal of dissolved and suspended solids from the condensate water. In this event, suction pressure was reduced resulting in a trip of the operating 4A main feedwater pump. The trip of the main feedwater pump and the subsequent loss of the main feedwater supply is a previously analyzed event. As a result of these analyses, plant procedures were developed to provide operator guidance in response to such a transient. The procedures and plant design assure that the plant is stabilized in a safe condition in accordance with the plant Technical Specifications. For this event, steam generator water levels were maintained within design operating levels by the automatic start of the auxiliary feedwater system. A standby feed water pump was subsequently started and the auxiliary feedwater pumps were secured and returned to their standby condition in accordance with plant procedures.

During the event, the 'B' auxiliary feedwater pump was out of service for required post maintenance testing prior to return to service. Other than the automatic start of the auxiliary feedwater pumps no manual or automatic reactor protection system or engineered safety feature actuations occurred or were required. Engineered safety features were designed to prevent by anticipation or by reducing the severity through quick automatic response, events that could affect the health and safety of the public.

Based upon the above, the health and safety of plant personnel and the general public were not compromised as a result of the loss of main feedwater and automatic start of the auxiliary feedwater systems.

### IV. CORRECTIVE ACTIONS

#### a. Immediate Corrective Action

The 'A' standby feedwater pump was started and used to supply feedwater to the steam generators. This feedwater supply allowed the auxiliary feedwater pumps to be placed in standby.

#### b. Corrective Actions to Prevent Recurrence

1. The condensate polisher system valves and operators were walked down in detail to determine needed component repairs or replacement. Appropriate work orders for identified needs were written. Work required to return the system to operation was completed.

2. Procedure OP-7001.3, Condensate Polishing System - Powdex Vessel Operation, was revised to require manual control of inlet and outlet valves to prevent inadvertent opening of the vessel inlet or outlet valves. Further investigation may require other appropriate corrective actions.

