REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8802170385 DOC. DATE: 88/02/12 NOTARIZED: NO DOCKET #
FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
AUTH. NAME AUTHOR AFFILIATION
HART, R. D. Florida Power & Light Co.
WOODY, C. O. Florida Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-001-00: on 880113, unit experienced turbine runback due to dropped control rod assembly & manual subcritical reactor trip occurred when addl control rods dropped into core. Caused by personnel error. Personnel counseled. W/880212 ltr.

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

NOTES:

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	PD2-2 LA	1	1	PD2-2 PD	1	1
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	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	1	0	NRR/DEST/CEB	1	1
	NRR/DEST/ELB	1	1	NRR/DEST/ICSB	1	1
	NRR/DEST/MEB	1	1	NRR/DEST/MTB	1	1
	NRR/DEST/PSB	1	1	NRR/DEST/RSB	1	1
	NRR/DEST/SGB	1	1	NRR/DLPQ/HFB	1	1
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	NRR/DRIS/SIB	1	1	NRR/PMAS/ILRB	1	1
	REG FILE 02	1	1	RES TELFORD, J	1	1
	RES/DE/EIB	1	1	RES/DRPS DIR	1	1
	RGN2 FILE 01	1	1			
EXTERNAL:	EG&G GROH, M	5	5	FORD BLDG HOY, A	1	1
	H ST LOBBY WARD	1	1	LPDR	1	1
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NRC Form 366
(9 83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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

TITLE (4) Turbine Runback Due to Dropped Control Rod and Subsequent Manual Subcritical Reactor Trip When Additional Control Rods Dropped Into the Core

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 1	1 3	8 8	8 8	–	0 0 1	–	0 0	0 2	1 2	8 8	N/A	0 5 0 0 0

OPERATING MODE (9)	1	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
Randall D. Hart, Licensing Engineer	3 0 5 — 2 4 6 - 6 5 5 9

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	A A	C O N	W 1 2 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 January 13, 1988, while at 100% power, Unit 3 experienced a turbine runback due to a dropped control rod assembly. The operators commenced operating procedure (OP) 1604.1, Full Length RCC - Periodic Exercise. Step 8.4.1 was initiated to step shutdown bank A control rods, when rod control cluster (RCC) N-9 dropped into the core. This energized the rod bottom bistable for N-9 initiating a rod position indication (RPI) turbine runback to approximately 70% power. Off normal operating procedures were consulted to stabilize reactor power. An attempt was made to retrieve the RCC which was unsuccessful. The unit was shutdown to facilitate repairs. During the shutdown sequence two more RCCs dropped and a manual reactor trip was initiated. The unit was stabilized in mode 3. An investigation into the root cause of the first dropped control rod determined that a pin on the connector for the movable gripper coil on the reactor head had been pushed out of engagement. Therefore when the RCC was moved, the movable gripper coil did not engage and the RCC dropped into the core. The other two dropped RCCs were due to personnel error in that a technician removed the power fuses to N-9 and did not identify that the power fuse to the movable gripper coil was common to two other RCCs. The connector pins on the RCCs were inspected and engaged as necessary. The appropriate personnel were counseled on this event.

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

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

EVENT:

On January 13, 1988, while at 100% power, Unit 3 experienced a turbine runback due to a dropped control rod assembly (EIIS:AA). At 0407 on January 13, 1988, the operators commenced operating procedure (OP) 1604.1, Full Length RCC - Periodic Exercise. Step 8.4.1 was initiated to step shutdown bank A control rods, when rod control cluster (RCC) N-9 dropped into the core. This energized the rod bottom bistable for N-9 initiating a rod position indication (RPI) turbine runback to approximately 70% power. Off normal operating procedure (ONOP) 3-ONOP-089, Turbine Runback, was consulted to stabilize reactor power. The Reactor Engineering Department was contacted for guidance and the recommendation was that if retrieval of the RCC was unsuccessful, reduce power to less than 50%. At 0449, 3-ONOP-028, Reactor Control System Malfunction, was used in attempt to realign RCC N-9 with shutdown bank A. This was unsuccessful and N-9 was declared inoperable. At 0504 a unit load reduction to less than 50% reactor power was commenced. An investigation by the Instrumentation and Control Department (I&C) determined that N-9 had an open circuit in the movable coil circuit. At this time plant management decided to shutdown unit 3 to facilitate investigations. The load reduction began at 0635 and the unit was taken off the line at 0737. Further trouble shooting by I&C resulted in plant management deciding to shutdown the unit to cold shutdown (mode 5) to facilitate repairs.

At 1318, the shutdown of the unit was continued. At 1319 with the D control rod bank at 100 steps, RCC M-10 (C control rod bank) dropped into the core. This point corresponds to the 100 step overlap between the D and C control rod banks. 3-ONOP-028 was consulted for guidance and the reactor shutdown was continued. At 1323, with the B control rod bank at 100 steps, RCC L-9 (A control rod bank) dropped into the core. This point also corresponds to the 100 step overlap between control rod banks B and A. At this point the operator manually tripped the reactor as required by 3-ONOP-028 due to the third RCC dropping into the core. The unit was subsequently stabilized in mode 3 (hot standby).

CAUSE OF EVENT:

An investigation into the root cause of the first dropped control rod determined that a pin on the connector for the movable gripper coil on the reactor head had been pushed partially out of engagement. After time this pin became completely disengaged with the connector. Therefore, when the operator attempted to move the RCC during the performance of OP 1604.8, the stationary coils disengaged from N-9, however, the movable coil did not engage on N-9 due to the pin in the connector not being engaged. This resulted in the dropped RCC N-9. The root cause for the partially engaged connector pin is still under investigation with the vendor. During the shutdown, the connectors for the other RCCs were inspected for partially engaged connector pins and any discrepancies were corrected.

The root cause for the other two dropped RCCs was personnel error. When RCC N-9 was taken out of service the power fuses to the stationary, lift and movable coils were pulled. The technician removing the fuses used an uncontrolled label located on the power supply cabinet to guide his efforts and did not use controlled documents to verify that he was not affecting any other components when he removed the fuses. The movable coils for RCCs N-9, M-10, and L-9 share a common neutral fuse. Therefore, when the power fuses for N-9 were removed, the power to the movable coil for M-10 and L-9 was lost. So when the RCC bank overlap initiated RCC movement, the movable coils for M-10 and L-9 did not energize and the RCCs dropped into the core.

ANALYSIS OF EVENT:

Upon initiation of the RPI rod bottom signal, a turbine runback was automatically initiated as designed. Reactor coolant system (RCS) and secondary system parameters responded as expected for this type of event.

At the time of the reactor trip, Unit 3 was in mode 3 and in the process of inserting the control rod and shutdown banks into the core. When the manual reactor trip signal was generated, the reactor trip breakers opened and shutdown and control rod banks inserted into the core as designed. A post trip review was performed to assess the proper operation of safety-related equipment. The post trip review established that the transient behavior of pertinent plant parameters for the reactor coolant system and steam generators responded as expected for a transient of this kind. Based on the above, the health and safety of the public were not affected.

CORRECTIVE ACTIONS:

1) The connector pins for RCC N-9 were inspected and engaged properly. The rest of the RCCs for Unit 3 were inspected for partially engaged connector pins. Several partially engaged pins were found and corrected.

2) The reason for the partially engaged pins is still under investigation. Upon completion of this investigation, appropriate corrective actions will be taken.

3) The I&C shop personnel have been counseled on the cause of the multiple RCC drops and how to prevent future occurrences.

4) Trouble shooting procedures will be clarified to ensure that proper drawing and/or prints are consulted prior to fuse removal. In this event a noncontrolled label had been used to identify the fuses. This label will be replaced.

5) Upon approval of the post trip review and completion of required maintenance activities, unit 3 will be returned to service.

6) This event will be reviewed by the Training Department to determine if additional training is warranted.

ADDITIONAL DETAILS:

The control rod system is supplied by Westinghouse.

Similar Occurrences: LERs 251-85-021 and 251-86-002 reported events where a turbine runback occurred due to a dropped control rod. However, the root cause for those runbacks was different from this event.

P. O. BOX 14000, JUNO BEACH, FL 33408-0420

FPL

FEBRUARY 1 2 1988

L-88-67
10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Unit 3
Docket No. 50-250
Reportable Event: 88-01
Date of Event: January 13, 1988
Turbine Runback Due to Dropped Control Rod
and Subsequent Manual Subcritical Reactor Trip
When The Additional Control Rods Dropped Into the Core

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,

DA Sager

for C. O. Woody
Executive Vice President

COW/SDF/gp

Attachment

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

SDF/012.LER

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