

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8704070199 DOC. DATE: 87/03/27 NOTARIZED: NO DOCKET #
 FACIL: 50-250 Turkey Point Plant, Unit 3, Florida Power and Light Co. 05000250
 AUTH. NAME: SALAMON, G. AUTHORITY AFFILIATION: Florida Power & Light Co.
 WOODY, C.O. Florida Power & Light Co.
 RECIP. NAME: RECIPIENT AFFILIATION

*Abnormal
Occur. + 6*

SUBJECT: LER 87-009-01: on 870215, maint personnel backed out orifice adjusting screw for turbine governor oil impeller pressure, resulting in reactor trip. Caused by personnel error. Governor impeller orifice cleaned & personnel counseled. W/870403 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR -- ENCL -- SIZE: -----
 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
McDONALD, D	1 1		
INTERNAL: ACRS MICHELSON	1 1	ACRS MOELLER	1 1
ACRS WYLIE	1 1	AEOD/DOA	1 1
AEOD/DSP/ROAB	2 2	AEOD/DSP/TAPB	1 1
NRR/ADT	1 1	NRR/DEST/ADE	1 0
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
NRR/DLPQ/QAB	1 1	NRR/DOEA/EAB	1 1
NRR/DREP/EPB	1 1	NRR/DREP/RAB	1 1
NRR/PMAS/ILRB	1 1	NRR/PMAS/PTSB	1 1
<u>REG FILE</u> 02	1 1	RES SPEIS, T	1 1
RGN2 FILE 01	1 1		
EXTERNAL: EG&G GROH, M	5 5	H ST LOBBY WARD	1 1
LPDR	1 1	NRC PDR	1 1
NSIC HARRIS, J	1 1	NSIC MAYS, G	1 1

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Turkey Point Unit 3										DOCKET NUMBER (2) 0 5 0 0 0 2 5 0					PAGE (3) 1 OF 0 3		
TITLE (4) Reactor Trip Followed by Turbine Trip During Turbine Governor Orifice Adjustment																	
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 5	8 7	8 7	0 0 9	0 1	0 3	2 7	8 7	N/A					0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)															
1		20.402(b)				20.405(e)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)			
POWER LEVEL (10)		20.406(a)(1)(i)				50.38(e)(1)				50.73(a)(2)(v)				73.71(c)			
1 0 0		20.406(a)(1)(ii)				50.38(e)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 368A)			
		20.406(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)							
		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										TELEPHONE NUMBER							
Gabe Salamon, Compliance Engineer										3 0 5 2 4 6 - 1 3 0 0							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																	
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS							
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input type="checkbox"/> NO					

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

ABSTRACT

On February 15, 1987, at 2020, with Unit 3 at 7% power, maintenance personnel backed out the orifice adjusting screw for the turbine governor oil impeller pressure, so that it became totally disengaged, causing a loss of turbine auto-stop oil pressure. The governor, sensing the decreasing pressure, attempted to increase turbine power by increasing the steam demand. This increased turbine first stage pressure above the P-7 value of 10% of full power, enabling the P-7 permissive, and making up half of the turbine trip upon power > 10% coincident with auto-stop oil pressure < 45 psig logic. As the oil pressure decreased below 45 psig, the above logic was completed, and the reactor, then the turbine tripped. The cause of the trip was personnel error in that insufficient attention was being paid to the orifice adjustment, with the consequence that it was not realized that the adjusting screw was about to become totally disengaged. Guidance during the evolution was being provided by a vendor technical representative. The original cause for the maintenance was low impeller oil pressure. The turbine control oil, lube oil, and seal oil piping will be cleaned during the next refueling outages for each unit.

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PDR ADCK 05000250
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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 7	— 0 0 9	— 0 1	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 368A's) (17)

EVENT

On February 15, 1987, at 2020, with Unit 3 at approximately 7% power, as maintenance personnel backed out the orifice adjusting screw for the turbine governor oil impeller pressure, the orifice adjusting screw was backed out too far, so that it became totally disengaged from the oil line, causing a loss of turbine control oil pressure. The governor, interpreting the decreasing oil pressure as a decrease in turbine speed, attempted to increase turbine power by increasing the steam demand. Increased steam demand was reflected by increased turbine first stage pressure, which quickly exceeded the P-7 permissive value of 10% of full power. Upon the P-7 permissive becoming enabled, half of the reactor trip upon power > 10% coincident with turbine auto-stop oil pressure < 45 psig logic was made up. The leak in the oil system also resulted in the auto-stop oil pressure decreasing swiftly. As the auto-stop oil pressure continued to drop, the pressure decreased below the 45 psig setpoint. This completed the above logic and the reactor tripped. The turbine trip followed, upon the opening of the reactor trip breakers. The unit was subsequently stabilized in hot standby.

After conclusion of the post-trip review and plant manager approval, the reactor was returned to criticality at 2145 on February 16, 1987.

CAUSE OF EVENT

The cause of the reactor trip was personnel error in that insufficient attention was being paid to the physical adjustment of the orifice. The consequence was that it was not realized that the orifice adjusting screw was about to become totally disengaged. This work was being performed under the verbal guidance of a vendor technical representative. A contributing cause was the necessity for the adjustment. On February 13, 1987, the unit was brought off line due to a steady decrease in governor impeller oil pressure. The cause of the pressure decrease was investigated, and a worn impeller oil sleeve was replaced. At the time of the replacement it was known that adjustments to the orifice would need to be made upon the turbine reaching operating speed. The adjustments were necessary to compensate for the difference in oil pressure due to difference between the old sleeve and the new sleeve. During the process of bringing the turbine up to speed (1800 rpm), it was noticed that the turbine governor impeller pressure stayed at about 23 psig. The normal and expected governor impeller pressure is between 26 and 30 psig with the turbine at 1800 rpm. At 2010, maintenance initiated further adjustments in order to increase the oil pressure. These adjustments were performed under vendor guidance. Just prior to the trip, the pressure reached approximately 25.5 psig.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1) Turkey Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 5 0 8 7 — 0 0 9 — 0 1 0 3 OF 0 3	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		87	009	01	03	OF	03

TEXT (If more space is required, use additional NRC Form 305A's) (17)

ANALYSIS OF EVENT

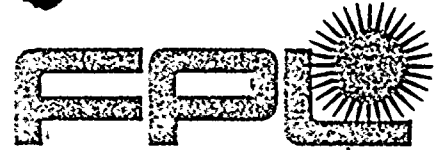
A post-trip review was performed to assess the proper operation of safety related equipment. The post-trip review established that the transient behavior of pertinent plant parameters for the reactor coolant system (RCS) and steam generators responded as expected for a reactor trip of this kind. Specifically, the RCS pressures and temperatures were determined to have followed an expected pattern based on the conditions leading up to the transient. Based on the above, the health and safety of the public were not affected.

CORRECTIVE ACTIONS

- 1) A post-trip review was completed and no abnormal operating conditions associated with the trip were identified.
- 2) The governor impeller orifice was cleaned and the governor was verified to be functioning properly.
- 3) The turbine control oil, lube oil, and seal oil piping will be cleaned during the next refueling outages for each unit.
- 4) The vendor technical representative was dismissed.
- 5) Maintenance supervision was reminded of the need to have a documented plan to follow for all post-maintenance adjustments, even when a vendor technical representative is used for input during job pre-planning.

ADDITIONAL DETAILS

Turbine Governor Manufacturer: Westinghouse; Serial #13-A-2893
Similar occurrences: LER 250-86-039.



'APRIL' 03 1987

L-87-142
10 CFR 50.73

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

Gentlemen:

Re: Reportable Event 87-09 Revision 1
Turkey Point Unit 3
Docket No. 50-250
Date of Event: February 15, 1987
Reactor Trip Followed by Turbine Trip
During Turbine Governor Orifice Adjustment

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

This revision is being made to correct the inadvertent deletion of two lines in the cause of event section on Revision 0, L-87-124.

Very truly yours,

C. O. Woody
Group Vice President
Nuclear Energy

COW/RG/gp

Attachment

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

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