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ACCESSION NBR:8712290086 DOC.DATE: 87/12/18 NOTARIZED: NO DOCKET #
FACIL:50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
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RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-026-00:on 871121,component cooling water pump 4B auto-start due to unanticipated drop in header pressure.
W/8 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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	REG FILE 02	1	1	RES DEPY GI	1	1
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RIDS/ADDS RIDS/ADDS

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 4	0 5 0 0 0 2 5 1	1 OF 0 3

TITLE (4) Component Cooling Water (CCW) Pump 4B Auto-Start Due to Unanticipated Drop In Header Pressure When CCW Pump 4C Was Returned to Service

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)
1 1	2 1	8 7	8 7	0 2 6	0 0	1 2	1 8	8 7	N/A	0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	5
POWER LEVEL (10)	0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check one or more of the following)* (11)

	20.402(b)		20.405(c)	X	50.73(a)(2)(iv)
	20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)
	20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)
	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)

	73.71(b)
	73.71(c)
	OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Gabe Salamon, Compliance Engineer	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

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 November 21, 1987, at 1030, with Unit 4 in mode 5, Component Cooling Water (CCW) pump 4B auto-started. At the time of this event, the 4C CCW pump was being returned to service, and a pressure test of the pump was be performed. In preparation for this test the suction isolation valve was opened, and the empty pump and piping between the isolation valves was filled. This rapid fill resulted in a 7% drop in the CCW Surge Tank level, a drop in header pressure below 75 psig, and the auto-start of the 4B CCW pump. Following the completion of the filling operation the header pressure quickly returned to normal. Just prior to this event, on November 19, 1987, Turkey Point changed from 2 pump to 1 pump operation during shutdown conditions. The causes of the event were insufficient consideration of the decreased margin between the new operating pressure and the auto-start setpoint under single pump operation and insufficient instructions to the operators valving in the 4C pump on the proper techniques for filling and venting empty piping. Efforts to lower the CCW discharge pressure setpoint further have been initiated. The Training Department will evaluate this event for incorporation into future operator training on the proper methods to fill and vent empty piping.

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(9 83)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Turkey Point Unit 4	0 5 0 0 0 2 5 1	8 7	— 0 2 6	— 0 0	0 2 OF 0 3

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

EVENT

On November 21, 1987, at 1030, with Unit 4 in mode 5, Component Cooling Water (CCW) (EIIS:CC) pump 4B auto-started upon sensing a header pressure less than the 75 psig setpoint. CCW pump 4A continued to operate during this event.

At the time of this event the 4C CCW pump was being returned to service following an overhaul. Prior to taking pump 4C out of service (OOS), valves 4-701C, the manual pump suction isolation valve, and 4-703C, the manual discharge isolation valve, were closed. Upon reinstallation of the pump, a pressure test to assure that no leaks were present was initiated. The suction isolation valve was opened, and the empty pump and piping between valves 4-701C and 4-703C were filled with water. This rapid fill resulted in a 7% drop in the CCW Surge Tank level and a drop in header pressure below 75 psig. Upon the pressure dropping below the setpoint, the logic for the auto-start of the 4B pump was completed starting the pump. Header pressure quickly returned to normal.

CAUSE OF EVENT

The causes of the event were as follows:

1) insufficient consideration was given to the increased potential for the inadvertent auto-start of an additional CCW pump during 1 pump operation with a fill and vent of a portion of the CCW system in progress.

2) insufficient guidance on the fill and vent of the empty piping was provided to the operators performing the valving in of the 4C pump.

Until November 19, 1987, Turkey Point had been operating with 2 CCW pumps concurrently when cooling the unit using the Residual Heat Removal (RHR) System. In order to decrease long term CCW heat exchanger tube degradation and pump wear concerns, a determination was made to operate with 1 CCW pump during RHR cooling. Two of the consequences of operating with 1 CCW pump were that the normal operating CCW system pressure was lower by approximately 10 psig, and the developed pump head dropped faster with increasing flow due to the increased slope of the pump curve at the new operating point. Normal RHR 2 pump system operating pressure was 90-100 psig, depending on system alignment, and the setpoint for the auto-start of an additional pump was 78.5 +/- 5 psig. When single pump operation was recommended, it was realized that inadvertent CCW pump auto-starts were more likely, and as a result, the setpoint was lowered to 75 +/- 1.5 psig. This change in the setpoint was not sufficient to compensate for the decrease in the normal system pressure coupled with the rapid fill of the empty 4C pump piping.

The operators opening valve 4-701C realized that there was a potential for an auto-start of the 4B pump. They were also under the impression that, as the valve was a large manual gate valve which takes 5 or more minutes to open fully, the valve

could not be opened fast enough to cause header pressure to drop sufficiently for an auto-start to occur. The fact the flow would actually increase rapidly as a gate valve is opened was not considered. The swiftly increasing flow caused a temporary drop in header pressure below 75 psig.

ANALYSIS OF EVENT

The FSAR states in Section 6 that the CCW system is used to cool the recirculation fluid during the residual heat removal recirculation phase. One of the three component cooling pumps is required to provide the core and containment cooling function during recirculation. During this event, the A pump was operating, and the B pump auto-started as designed. Based on the above, the health and safety of the public were not affected.

CORRECTIVE ACTIONS

1) Efforts to lower the CCW discharge pressure setpoint further in order to achieve a greater margin between operating and setpoint pressures have been initiated.

2) The Training Department will evaluate this event for incorporation into future operator training on the proper methods to fill and vent empty piping.

ADDITIONAL DETAILS

Similar occurrences: LER's 251-87-02 and 251-87-11 reported previous CCW autostarts, however, neither of these auto-starts was due to the root causes identified in this LER.

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

FPL

DECEMBER 18 1987

L-87-521
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: 87-26
Date of Event: November 21, 1987
Component Cooling Water (CCW) Pump 4B Auto-Start
Due to Unanticipated Drop In Header Pressure
When CCW Pump 4C Was Returned to Service

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,

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/018.LER

IE22
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