

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Turkey Point Unit 3

DOCKET NUMBER (2)

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

PAGE (3)

TITLE (4)

Engineered Safety Feature Actuation - Auxiliary Feedwater System Initiation

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	7	2	2	8	5	8	5	0	2	1	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):									
3			20.402(b)			20.405(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			73.71(b)
POWER LEVEL (10)			20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)
0 0 0			20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 365A)
			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)(ix)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Randall D. Hart, Licensing Engineer	3 0 5 2 4 5 - 2 9 1 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
X	B	A 8 4	M 1 2 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

REVISION 1

Event: On July 22, 1985, while Unit 3 was in hot standby and Unit 4 at 100% power, two automatic initiations of the auxiliary feedwater (AFW) system occurred. While recovering from a Unit 3 reactor trip (LER 250-85-019) the "B" steam generator (SG) bypass feedwater control valve (FCV-3-489) would not open. The "B" SG level decreased until it reached the low-low SG level setpoint (15%) which resulted in an automatic start of the AFW pumps. Later during the unit recovery the "C" SG bypass feedwater control valve (FCV-3-499) would not close. This resulted in the "C" SG level increasing until it reached the high-high level setpoint (80%). This tripped the "B" SG feedwater pump that was in operation, thus completing the SG protection logic and the AFW system automatically started. In addition, it was discovered that the train 2 AFW flow control valve (CV-3-2833) would not close. The valve was declared inoperable and a unit 3 cooldown to hot shutdown conditions was commenced and completed.

Cause of Event: The reason for the malfunction of the valves described above was due to the presence of moisture in the instrument air supplied to the valve actuators.

Corrective Actions: The following corrective actions were taken:

- 1) The actuators for the AFW flow control valves on both units, FCV-3-489 and FCV-3-499 were inspected, cleaned, and verified to operate properly.
- 2) A blowdown of low points in the instrument air system and flow control valve actuators was done to remove any traces of moisture from the instrument air system.
- 3) The desiccant was replaced in both units instrument air dryers.

The health and safety of the public were not affected. Similar occurrences: None

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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 5	0 2 1	0 1	0 2	OF	0 3

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

REVISION 1Event:

On July 22, 1985, while Unit 3 was in hot standby and Unit 4 was at 100% power, an automatic initiation of the auxiliary feedwater (AFW) system occurred at 12:40 a.m. Unit 3 was recovering from a reactor trip that had occurred approximately one (1) hour earlier (LER 250-85-019) when the "B" steam generator (SG) bypass feedwater control valve (FCV-3-489) would not open. This caused the "B" SG level to decrease until it reached the low-low SG level setpoint (15%) which resulted in an automatic start of the AFW pumps. After the pumps started, the "A" and "C" AFW pumps tripped on mechanical overspeed and the "B" AFW pump oscillated on its electronic overspeed trip. The "A" AFW pump was successfully restarted at 12:45 a.m., after resetting its mechanical overspeed trip. The AFW pumps were secured at 12:50 a.m. The overspeed trips of the A and C AFW pumps were due to cycling the governor manual speed control knob before the pump turbines had stopped rotating after the first automatic start of the AFW system following the reactor trip. The B AFW pump electronic overspeed trip was found to be set lower than required.

At 4:00 a.m., on July 22, 1985, another initiation of the AFW system occurred. The "C" SG feedwater bypass valve (FCV-3-499) would not close resulting in "C" SG level increasing until it reached the high-high level setpoint (80%). This tripped the "B" SG feedwater pump and with the "A" SG feedwater pump not operating at the time, this completed the SG protection logic and the AFW system automatically started. At 4:04 a.m., while securing the AFW system, it was discovered that the train 2 AFW flow control valve (CV-3-2833) for the "C" SG had remained open since experiencing operability problems earlier and would not close, so CV-3-2833 was declared inoperable. Technical Specification (TS) 3.8.4.b requires two independent AFW trains and a third AFW pump to be operable whenever both units are above hot shutdown. CV-3-2833 being OOS on Unit 3 exceeded the requirements of TS 3.8.4.b thus requiring a unit cooldown to hot shutdown condition. The cooldown was initiated at 4:50 a.m. and completed at 10:20 a.m.

Upon completion of necessary repairs and review of the post trip review, a unit 3 start-up was commenced at 2:53 a.m. on July 24, 1985. At 6:40 a.m., a Unit 3 shutdown from Mode 2 (Start-up) was commenced due to exceeding the requirements of (TS) 3.8.4.b and the unit achieved hot standby at 6:50 a.m. During the performance of operating surveillance procedure 3-OSP-075.1, AFW Train 1 Operability Verification, and 3-OSP-075.2, AFW Train 2 Operability Verification, AFW flow control valves CV-3-2832 ("B" SG) and CV-3-2833 ("C" SG) for train 2 would not close and were declared inoperable. The valves were stroke tested at 12:44 p.m., on July 24, 1985. At 1:20 p.m., a unit cooldown from hot standby to hot shutdown was commenced due to a stroke discrepancy on CV-3-2833. The cooldown was completed at 6:28 p.m., when the unit was placed in hot shutdown (Mode 4).

After the unit entered hot shutdown, an action plan was developed by plant management to ensure that the instrument air system operated within acceptable criteria. This plan is described in corrective action number 7. These actions were implemented or initiated prior to placing Unit 3 back in service on Friday, July 26, 1985 at 4:33 p.m.

Cause of Event:

The reason for the malfunction of the valves described above was due to the presence of moisture in the instrument air supplied to the valve actuators.

Analysis of Event:

During the events on July 22, 1985, Unit 3 was in hot standby with the control rods inserted into the core. Subsequent tests and operation of the AFW pumps ensured their capability of performing their intended functions upon demand. The redundant train AFW flow control valves remained operable throughout these events. Dew point temperatures were taken at the outlet of the instrument air dryers and at the AFW flow control valve regulators for both units. The highest recorded dew point temperature was 53 degrees Fahrenheit (ambient air temperature was greater than 80 degrees Fahrenheit) which is within the criteria of at least 18 degrees Fahrenheit below ambient air temperature as specified in the Quality Standard for Instrument Air, ANSI/ISA-S7.3. Based on the above, the health and safety of the public were not affected.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

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

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

REVISION 1Corrective Actions:

The following corrective actions were taken:

- 1) The mechanical overspeed trip was reset and the A & C AFW pumps were restarted using only the starting and stopping sequence of the appropriate surveillance procedures at 2:20 a.m. on July 22, 1985. This was done on a priority basis to verify that the A & C AFW pumps would start and remain operational.
- 2) The actuators for FCV-3-489 and FCV-3-499 were inspected and cleaned. The valves were then verified to operate satisfactorily.
- 3) The actuator for CV-3-2833 was inspected and cleaned. The valve positioner was calibrated and the valve was verified to operate satisfactorily.
- 4) The actuators for CV-3-2832 was inspected and cleaned. The valve was verified to operate satisfactorily.
- 5) Upon indication of additional problems with CV-3-2833, its valve positioner was replaced and the valve satisfactorily stroke tested.
- 6) A technical review of the proceduralized shutdown sequence of the AFW pumps indicated that this sequence could be enhanced by clarifying the conditions under which manual speed adjustments should be made. On-the-spot changes (OTSC) to the applicable procedures were written and approved to incorporate the change concerning the manual speed adjustment on shutdown of the AFW pumps. In addition, specific guidance has been added to Off-Normal Operating Procedure (ONOP) 0208.1, "Shutdown Resulting from Reactor Trip or Turbine Trip", to direct the operator to Operating Procedure (OP) 3(or 4)-OP-075, "Auxiliary Feedwater System", for the proper shutdown sequence of the AFW pumps.
- 7) A surveillance plan was established to ensure that the instrument air system operated within acceptable criteria. This plan included the following:
 - a) Dew point temperatures were taken at the outlet of the instrument air dryers and the AFW flow control valves on both units. The readings will continue to be taken at the outlet of the instrument air dryers for both units until a satisfactory trend can be established. The dew point temperatures at the control valves has been discontinued due to satisfactory trends.
 - b) A blowdown of the AFW flow control valve actuators and positioners that receive instrument air was done to remove any traces of moisture.
 - c) A routine blowdown of selected low points in the instrument air system was begun to remove any traces of moisture. Presently no traces of moisture has been found.
 - d) The Unit 4 instrument air dryer was repaired and placed back in service on July 26, 1985. The desiccant was replaced in both Units' instrument air dryers.
 - e) A temporary operational procedure will be issued to provide guidelines for the instrument air dryers during normal and abnormal conditions which will remain in effect until the instructions can be incorporated into existing and/or new operational procedures. The procedure also includes acceptance criteria provided by our Engineering Department for the dew point temperatures recorded and actions to be taken if the criteria is exceeded.



DEC 1 8 1985
L-85-468

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

Gentlemen:

Re: Reportable Event 85-21, Revision 1
Turkey Point Unit 3
Date of Event: July 22, 1985
Engineered Safety Feature Actuation
Auxiliary Feedwater System Initiation

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

Very truly yours,

A handwritten signature in dark ink, appearing to read "C.O. Woody", is written over the typed name.

C.O. Woody
Group Vice President
Nuclear Energy

COW/PLP:ss

Attachment

cc: Dr. J. Nelson Grace
Region 11, USNRC
Harold F. Reis, Esquire
File 933.1

IE22
1/1