

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 4
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TITLE (4)
Technical Specification LCO Exceeded - AFW Pump Operability

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	2	03	8	4	-	0	3	2	-	0	0	0	1	0	2	8	5	N/A	0	5	0	0	0	2	5	1

OPERATING MODE (9) N	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)	20.406(c)	50.73(a)(2)(iv)	73.71(b)								
	20.406(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)								
	20.406(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
	20.406(a)(1)(iii)	X 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 Roger L. Teuteberg, Regulation and Compliance Engineer	TELEPHONE NUMBER 3 0 5 2 4 5 - 2 9 1 0
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS
X	B/A	P/D/T	B/O/S/O	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

Event: On December 3, 1984, while Unit 3 was at 100% power and Unit 4 was in a hot shutdown condition in the process of a unit start-up, the Technical Specification 3.8.4.b limiting condition for operation (LCO), related to the auxiliary feedwater (AFW) pump availability, was inadvertently exceeded. Although Technical Specification 3.8.4.b does not specifically address the remedial actions necessary when one AFW pump becomes inoperable and either reactor coolant system is heated to above 350°F but is at less than 2% of full power, an interpretation of this Technical Specification would require an immediate cooldown of one unit to less than 350°F. During periodic functional testing of the "A" AFW pump, this pump was taken out of service for two hours and 16 minutes without initiating a Unit 4 cooldown.

Cause of Event: The root cause of the occurrence was the failure by plant personnel to properly apply two recent interpretations of Technical Specification 3.8.4 which would require the immediate initiation of a reactor system cooldown of one unit to less than 350°F, provided that this unit is maintaining a reactor coolant temperature above 350°F but is at less than 2% power.

Interim Corrective Actions: Two interim corrective measures already taken are identified in the text portion of this LER.

Long Term Corrective Actions: Long term corrective measures will include: (1) a further revision of the Technical Specification 3.8 to allow an action time period, upon entering the LCO, before cooldown of a unit to below 350°F; (2) the completion of a significant effort to evaluate and enhance the performance and reliability of the AFW system; (3) training for operators on the manual speed adjustment and mechanical/electronic overspeed protection features of the AFW pumps, which will be included as a standard subject in all subsequent annual operator requalification training and other operator training programs; (4) initiation of hands-on training for AFW pump operators on the AFW pump operation and protective equipment; and (5) documented training by Shift Advisors on the requirements of Technical Specifications as they relate to the AFW System operation, equipment trips, and operating limitations. The health and safety of the public were not affected. Similar occurrences: 250-80-006, 250-83-009, 250-83-012, 250-84-008.

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

Event

On December 3, 1984, while Unit 3 was at 100% power and Unit 4 was in a hot shutdown condition in the process of a unit startup, the "A" AFW pump experienced an overspeed trip during a periodic surveillance test being performed in accordance with the plant procedure OP 7304.1. The cause of the "A" AFW pump trip was thought to be the mechanical overspeed protection feature of the pump and the Maintenance Department was contacted to further investigate. Shortly afterward at 10:44 a.m., the "A" AFW pump was declared out of service. Operational management was informed of the problem, concurred with the 72 hour LCO requirement, halted start-up activities on Unit 4, and decided to immediately begin testing of the "B" AFW pump to determine whether a similar condition existed. During testing of the "B" AFW pump, it was discovered that the most probable cause of the earlier "A" AFW pump trip was actuation of the electronic overspeed trip, a speed limiting device, and not the mechanical overspeed trip feature. Further investigation revealed that the electronic overspeed trip had actuated on the "A" AFW pump most probably due to rapid flow control changes. During retesting of the "A" AFW pump, Technical Department personnel noticed the DP transmitter had a zero output to the turbine governor. This DP transmitter measures the differential pressure between the AFW pump turbine steam supply and the AFW pump discharge and inputs a signal into the turbine governor. However, even with the DP transmitter output to the "A" AFW pump governor malfunctioning, the pump tested successfully. The "A" AFW pump was declared operable at 1:00 p.m., because proper operation of each pump had been demonstrated in the past without the DP transmitter. The DP transmitter was subsequently removed from service using a Temporary System Alteration (TSA).

Later in the afternoon on the same day, the "A" AFW pump was declared out of service by Operations management until resolution of the AFW pump's operability with regard to the operability of the DP transmitter, could be determined. An immediate cooldown of the Unit 4 Reactor Coolant System was initiated at this time in accordance with Technical Specification 3.8.4.

Cause of Occurrence

Technical Specification 3.8.4.b allows one of the three AFW pumps which are shared between units 3 and 4, to be out of service for up to 72 hours, while both reactors are above 2% power, before initiation of a shutdown of one of the reactors. This same Technical Specification does not, however, specifically address the remedial actions necessary when either Reactor Coolant System is heated above 350°F, but is at less than 2% of full reactor power. The Technical Specification Limiting Condition for Operation was exceeded for a period of 2 hours and 16 minutes, because of a failure to immediately initiate a cooldown of Unit 4, upon declaring the "A" AFW pump out of service at 10:44 a.m. The root cause of this occurrence was the failure of plant personnel to immediately recognize that Technical Specification 3.8.4 required the immediate initiation of a reactor system cooldown of one unit to less than 350°F. The specific reasons for this occurrence are:

1. Because the testing of the "A" AFW pump was associated with the operating unit at power, i.e. Unit 3, the Operations personnel on shift concluded that the inoperability of one AFW pump constituted a 72 hour LCO after reviewing the Technical Specification 3.8. The Operations Superintendent, when notified of the pump trip concurred with the 72 hour LCO because he assumed the pump test was being performed as a normal and routine part of the Unit 4 startup. This would require a unit to be above 2% power and Technical Specifications would allow the 72 hour LCO.

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

2. Historically, the LCO for the Turkey Point Technical Specification 3.8 has been subject to several interpretations. This was clearly an element in this particular incident. Prior to January 1984, the interpretation of the LCO contained in Technical Specification 3.8 was that because 72 hours were allowed for corrective actions when both units were at power, i.e., above 2% power, this same action period was allowed when one unit was at power while the second unit was in a condition above 350°F. As a result of a February 1984 incident (LER 250-84-008), this interpretation was modified to require an immediate initiation of a cooldown of one unit to below 350°F, upon taking any AFW pumps out of service when one unit was above 350°F, but not yet on line. This was subsequently modified during the summer of 1984 to require an immediate cooldown of one unit, after taking an AFW pump out of service, when this unit was above 350°F but less than 2% power.

3. The management control systems which should have assured that the interpretations of Technical Specifications were incorporated into the Plant's operation did not effectively accomplish their objectives. The January interpretation was promulgated by a Special Instruction but was not consulted by the Control Room. The summer interpretation was not formally promulgated to the Control Room.

Interim Corrective Actions

Interim corrective measures already taken to preclude a similar incident include:

- (1) a revision of Technical Specification 3.8, which addresses the Limiting Condition for Operation (LCO) for a single unit when its reactor coolant is heated above 350°F and surveillance testing is being conducted on the AFW pumps, was effective on December 17, 1984; and
- (2) a revision of the AFW System test procedure has been approved to specifically delineate an immediate cooldown upon loss, due to inoperability, of an AFW pump.

Long Term Corrective Measures

Long term corrective measures to preclude this type of incident will include:

- (1) a further revision of the Technical Specification 3.8 is under development to allow an action time period, once the LCO has been entered, before shutdown of a unit;
- (2) the completion of a significant effort to evaluate and enhance the performance and reliability of the AFW System as the result of recommendations from an interdisciplinary task force;
- (3) training for operators on the manual speed adjustment and mechanical/electronic overspeed protection features of the AFW pumps, which will be included as a standard subject in all subsequent annual operator requalification training and other operator training programs;

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- (4) initiation of hands-on training for AFW pump operators on the AFW pump operation and protective equipment; and
- (5) documented training by Shift Advisors on the requirements of Technical Specifications as they relate to the AFW System operation, equipment trips, and operating limitations.

In addition, two new non-safety related electric driven standby steam generator feedwater pumps will be placed into service in the near future. These two pumps will eliminate the need to use the AFW pumps except for functional testing and upon automatic initiation during various accident scenarios.



January 2, 1985
L-85-3

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

Gentlemen:

Re: Reportable Event 84-32
Turkey Point Unit 3
Date of Event: December 3, 1984
Technical Specification-AFW Pump Operability

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 cursive script, appearing to read "J. W. Williams, Jr.", is written over the typed name.

J. W. Williams, Jr.
Group Vice President
Nuclear Energy

JWW/PLP/js

Attachment

cc: J. P. O'Reilly, Region II, USNRC
Harold F. Reis, Esquire
File 933.1
PNS-LI-85-003-1

IE22
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