

## 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 2

PAGE (3)

TITLE (4)  
**Design Deficiency for Main Steam Isolation Valves**

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)							
0	7	2	3	8	5	8	5	0	2	0	5	0	0	0	2	5	1
									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)																								
4	<table border="1"><tr><td>20.402(b)</td><td>20.405(c)</td><td>50.73(a)(2)(iv)</td><td>73.71(b)</td></tr><tr><td>20.405(a)(1)(i)</td><td>50.36(c)(1)</td><td>50.73(a)(2)(v)</td><td>73.71(c)</td></tr><tr><td>20.405(a)(1)(ii)</td><td>50.36(c)(2)</td><td>50.73(a)(2)(vii)</td><td>X OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td></tr><tr><td>20.405(a)(1)(iii)</td><td>50.73(a)(2)(i)</td><td>50.73(a)(2)(viii)(A)</td><td>Part 21</td></tr><tr><td>20.405(a)(1)(iv)</td><td>X 50.73(a)(2)(ii)</td><td>50.73(a)(2)(viii)(B)</td><td></td></tr><tr><td>20.405(a)(1)(v)</td><td>50.73(a)(2)(iii)</td><td>50.73(a)(2)(ix)</td><td></td></tr></table>	20.402(b)	20.405(c)	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)	X 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)	Part 21	20.405(a)(1)(iv)	X 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)	
20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)																						
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20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X 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)	Part 21																						
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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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	X				

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

**Event:**

On July 23, 1985, Turkey Point Plant Units 3 and 4 was notified by our Power Plant Engineering Department of a 10 CFR Part 21 deficiency concerning the ability to close the main steam isolation valves (MSIVs). Each MSIV is a check valve installed in the reverse direction. MSIV closure is assisted by instrument air, a partial travel spring and steam flow. Operating air for each MSIV is stored in accumulators mounted on the valve assembly and backed up by the instrument air system. The MSIVs were designed to close assisted by steam flow since they were intended to mitigate the consequences of a large steam line break. However, there are other events for which MSIV closure is required where large steam flows may not exist. Under these low steam flow conditions and a loss of instrument air pressure, the accumulator air volume may not be sufficient to close the MSIVs.

The inability to close the MSIVs during an uncontrolled steam release could be postulated to result in a loss of the steam generators as a secondary heat sink. A loss of this secondary heat sink compromises the ability to adequately remove decay heat from the core.

**Corrective Actions:**

- 1) Off-Normal Operating Procedure (ONOP) 15608.1, "Loss of Instrument Air", has placed restrictions on instrument air pressure. In the event that instrument air pressure cannot be kept within these restrictions, corrective actions are outlined to restore instrument air pressure to allowable limits. If this cannot be done, a unit shutdown is required.
- 2) The design of the MSIVs will be upgraded to assure that each MSIV will meet the Final Safety Analysis Report closure criteria without steam flow assistance. A plant change modification for implementing this design upgrade is scheduled to be issued by January 1986.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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 0	— 0 0	0 2	OF	0 2

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

**Event:**

On July 23, 1985, Turkey Point Plant Units 3 and 4 was notified by Power Plant Engineering of a 10 CFR Part 21 deficiency concerning the main steam isolation valves (MSIVs). Each MSIV is a check valve installed in a reverse direction. Under normal operation, each MSIV is held open (against steam flow) by air pressure acting on the bottom of the operating piston. On a closure signal, air is directed to the top of the piston while air is vented from the bottom. A partial travel spring and steam flow assist in valve closure. Operating air for the MSIV is stored in accumulators mounted on the valve assembly and backed up by the instrument air system. By design, MSIV closure is assisted by steam flow since they were intended to mitigate the consequences of a large steam line break. However, there are other events for which MSIV closure is required where large steam flows may not exist. Under these low steam flow conditions and a loss of instrument air pressure, the accumulator air volume may not be sufficient to close the MSIVs.

The inability to close the MSIVs during an uncontrolled steam release could be postulated to result in a loss of the steam generators as a secondary heat sink. A loss of this secondary heat sink compromises the ability to adequately remove decay heat from the core. The design of the main steam system and the performance specification for purchase of the MSIVs was developed by Bechtel Power Corporation. The valve body and valve air operator of the MSIVs were built by Schutte-Koerting, a division of Ametek, Inc.

The other nuclear plants in Florida Power and Light's system have been made aware of the potential problem. An entry will be made in the INPO Network to make other nuclear facilities aware of the potential problem.

The individual informing the Commission is: C. O. Woody, Vice President, Nuclear Operations, P. O. Box 029100, Miami, Florida 33102.

**Analysis of Event:**

Instrument air is available to close the MSIVs in the event that steam flow is not sufficient. Presently, Off-Normal Operating Procedure (ONOP) 15608.1, "Loss of Instrument Air", has placed limits on instrument air pressure for both units. If these limits cannot be met, actions are outlined to return instrument air pressure to allowable limits. If these actions do not restore instrument air pressure to allowable limits, a unit shutdown is required. Also, cross ties to Fossil Units 1 and 2 are available to provide an additional source of instrument air. These actions ensure that a continuous supply of instrument air is available to operate the MSIVs during plant operation. Based on the above, the health and safety of the public were not affected.

**Corrective Actions:**

- 1) ONOP 15608.1 has placed restrictions on instrument air pressure. In the event that instrument air pressure cannot be kept within these restrictions, corrective actions are outlined to restore instrument air pressure to allowable limits. If this cannot be done, a unit shutdown is required.

As part of the evaluation, our engineering department has determined that continued plant operation is justified based on these actions.

- 2) The design of the MSIVs will be upgraded to assure that each MSIV will meet the Final Safety Analysis Report closure criteria without steam flow assistance. A plant change modification for implementing this design upgrade is scheduled to be issued by January 1986.



July 29, 1985  
L-85-293


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

Gentlemen:

Re: Reportable Event 85-20  
Turkey Point Unit 3  
Date of Event: July 23, 1985  
Design Deficiency for Main Steam/Isolation Valves

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 21 to provide notification of the subject event.

Very truly yours,

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

JWW/PLP/js

Attachment

cc: Dr. J. Nelson Grace, Region II, USNRC  
Harold F. Reis, Esquire  
PNS-LI-85-280p

IE22  
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