NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
JAMES A. FITZPATRICK NUCLEAR POWER PLANT	0 5 0 0 0 3 3 3	1 OF 0 3

TITLE (4)
OUTBOARD MSIV ACTUATOR FAILURES

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 2	8 5	8 5	0 2 7	0 0	1 2	2 0	8 5		0 5 0 0 0
										0 5 0 0 0

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)	0 1 5	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	X 50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	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)	
		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)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
ROBERT T. LISENO, MAINTENANCE SUPERINTENDENT	3 1 5 3 4 2 - 3 8 4 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	
B	S B	1 S V	A 6 0 9	Y							
X	S B	1 S V	H 1 9 8	Y							

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 3	0 1	8 6

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

During normal power operation at 2135 on 22 November 1985 while performing Main Steam Isolation Valve stroke time testing two outboard MSIVs were found to be inoperative. The "B" outboard MSIV had a failed hydraulic stroke time adjusting device. This failure resulted in stroke time less than the 3 to 5 second closure time specified in Technical Specification, Table 3.7.1 (actual time 2.86 seconds). During the same test the "D" outboard MSIV failed to move from the open position when its control switch was placed in the close position. After a number of manipulations of the control and test switches, this MSIV began operating normally and had an acceptable valve stroke time.

A normal plant shutdown was initiated at 1600 on 23 November 1985 to effect troubleshooting and repairs. The cause of the stroke time adjusting device failure could not be defined. Further testing of materials is being completed to assist in evaluating the problem. The "D" outboard MSIV failed to close due to a sliver of brass in the air pilot valve caused by cross threading of the air line. Repairs to both problems were completed. Checks of other MSIVs were also performed. No additional failures of either nature were found. The inboard MSIVs were fully operational during the event and would have provided the containment isolation function if called upon.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
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JAMES A. FITZPATRICK NUCLEAR POWER PLANT	0 5 0 0 0 3 3 3	8 5	— 0 2 7	— 0 0	0 2 OF 0 3

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

During normal power operation at 2135 on 22 November 1985 while performing Main Steam Isolation Valve stroke time testing two outboard MSIVs were found inoperative. These failures led to a plant shutdown to troubleshoot and repair the MSIV problems.

"B" outboard MSIV stroked too quickly during the surveillance test (2.86 seconds instead of the required 3 to 5 seconds; Technical Specification Table 3.7.1). Upon visual examination the stroke time adjusting device was found to have failed. This device is a Hiller Model SA-A011 hydraulic dashpot assembly which controls valve speed by regulating oil flow between upper and lower piston areas. Retaining screws holding the shaft seal assembly failed. This allowed the seal to be expelled from the dashpot and the dashpot fluid to escape.

The cause of this failure could not be determined. Because oil was seen smoking on the hot steam piping during the visual exam, the failure is assumed to have occurred when the valve was closed for stroke timing. While performing this stroke timing, all other MSIVs are full open and the associated main steam lines accommodate the increased steam flow. Failures of this hydraulic cylinder at other plants have been attributed to opening the MSIVs against excessive pressure (INPO SER 37-82). This was not the case for this failure. Failures at other installations also involved distortion and fracture of the cylinder tube. Again, this was not the case. Metallurgical testing of the bolting will be conducted to determine cause of failure and assure the correct fastener material was used.
A supplemental report will be submitted when the test results are available.

Because the "B" outboard MSIV was inoperative the inboard valve in the same line was closed to provide containment isolation in accordance with Technical Specification paragraph 3.7.D. This was accomplished at 0142 on 23 November 1985. During the plant shutdown the "B" outboard MSIV stroke timing device was repaired. In addition, the retaining screws of the remainder of the outboard MSIVs were removed, examined and replaced. No evidence of degradation was noted on the other units.

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

The "D" outboard MSIV was found inoperable during the same surveillance testing in which the "B" outboard MSIV failure occurred. When the control switch was placed in the closed position no valve motion occurred. The control switch de-energizes an AC and a DC solenoid in the air supply to the MSIV air actuator. This action, through a set of relay pilots, causes air to be redirected for valve closure. Immediately following the discovery that the valve would not close the operators jogged a test solenoid in the air circuit open and closed. After several jogging cycles, the MSIV closed fully. The valve then was cycled several times with no reoccurrence of the problem. Although considered probably operable, the decision was made to shutdown and investigate the potential causes of the problem (also repair the "B" MSIV). During the plant shutdown as the MSIVs were being closed the "D" outboard MSIV again failed to close.

During the plant shutdown the cause of the problem was found and corrected. The dual solenoid valve, ASCO Model No. L8323A35E, had an air fitting cross threaded. A sliver of brass entered the pilot area and prevented proper seating of the pilot. The remainder of the outboard MSIV dual solenoid pilots were inspected. No cross-threading was found on these valves.

Details of this event will be discussed with maintenance personnel during training to assure those involved are cognizant of the event and the need for care in assembling threaded fittings.

There are two MSIVs in each main steam line providing containment isolation capabilities. This event involved the simultaneous inoperability of two of the four outboard isolation valves. All inboard MSIVs were fully operational throughout this event to provide containment isolation if necessary. Should a transient requiring isolation have occurred prior to the discovery of these problems, the "D" main steam line would have been isolated by the inboard MSIV. Since the "B" outboard valve stroke time was 0.14 seconds faster than the minimum analyzed, a very small increase in the pressure spike seen by the reactor could have resulted if all MSIVs had automatically closed. Since no transient took place while the valve stroke time was below minimum, the event did not result in a significant hazard to the public.

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Radford J. Converse
Resident Manager

New York Power Authority

December 20, 1985
JAFP 85-0997

United States Regulatory Commission
Document Control Desk
Washington, D.C. 20555

REFERENCE: DOCKET NO. 50-333
LICENSEE EVENT REPORT: 85-027-00

Dear Sir:

Enclosed please find referenced Licensee Event Report in accordance with 10CFR50.73.

If there are any questions concerning this report, please contact Mr. Robert Liseno at 315-342-3840, extension 220.

Very truly yours,

RADFORD CONVERSE

RC:RTL:nan

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