

James A. FitzPatrick
Nuclear Power Plant
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Michael J. Colomb
Site Executive Officer

November 17, 2000
JAFP-00-0269

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

Subject: **Docket No. 50-333**
LICENSEE EVENT REPORT: LER-00-015 (DER-00-05158)

Containment Leakage Rate Exceeds Authorized Limits

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73(a) (2) (ii), "Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded."

There are no commitments contained in this report.

Questions concerning this report may be addressed to Mr. Gordon Brownell at (315) 349-6360.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Michael J. Colomb'.

MICHAEL J. COLOMB

MJC:GB:las
Enclosure

cc: USNRC, Region 1
USNRC, Project Directorate
USNRC Resident Inspector
INPO Records Center

IE22

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

James A. FitzPatrick Nuclear Power Plant

DOCKET NUMBER (2)

05000333

PAGE (3)

1 OF 5

TITLE (4)

Containment Leakage Rate Exceeds Authorized Limits

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 NAME	DOCKET NUMBER
10	18	00	00	015	00	11	17	00	N/A	05000
									N/A	05000
OPERATING MODE (9)		N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)		0	20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)	
			20.2203(a)(1)		20.2203(a)(3)(i)		X 50.73(a)(2)(ii)		50.73(a)(2)(x)	
			20.2203(a)(2)(I)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71	
			20.2203(a)(2)(ii)		20.2203(a)(4)		50.73(a)(2)(iv)		OTHER	
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A	
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME

Mr. Gordon Brownell, Sr. Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

315-349-6360

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	SB	ISV	E095	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

X YES (If yes, complete EXPECTED SUBMISSION DATE).		NO		EXPECTED SUBMISSION	MONTH	DAY	YEAR
					3	2	01

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On October 18, 2000, following completion of Local Leak Rate Testing (LLRT) of valves 29AOV-80D (inboard) and 29AOV-86D (outboard) Main Steam System isolation valves (MSIVs), it was determined that the Primary Containment Type B and Type C as-found running total minimum-pathway leakage rate had exceeded the maximum allowable limit of 320 standard liters per minute (SLM) specified in Technical Specifications (TS) Section 6.20. When leak tested in combination (applied test pressure between the inboard and outboard MSIV), test results demonstrated seat leakage in excess of 320 SLM. At the time of the testing, the mode switch was in the REFUEL position while the plant was conducting Refuel Outage 14.

The excessive leakage rate of inboard MSIV 29AOV-80D was attributed to valve stroke disc to seat misalignment. The excessive leakage rate of outboard MSIV 29AOV-86D was attributed to scoring in valve seat area.

The failed valves were repaired and retested satisfactorily prior to plant startup. An equipment failure evaluation is being completed for the valves that failed testing.

LICENSEE EVENT REPORT (LER)

TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)		
James A. FitzPatrick Nuclear Power Plant	05000333	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 5		
		00	015	00			

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

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Event Description

The plant entered Refuel Outage 14 on October 6, 2000. Type C Local Leak Rate Testing (LLRT) activities on the Primary Containment [NH] penetrations and isolation valves commenced shortly after plant cooldown in accordance with Technical Specifications (TS) Section 6.20, "Primary Containment Leakage Rate Testing Program". On October 18, 2000, following completion of LLRTs of the Main Steam System [SB] Main Steam isolation valves (MSIVs) 29AOV-80D (inboard) and 29AOV-86D (outboard), it was determined that the Primary Containment Type B and Type C as-found running total minimum pathway leakage rate had exceeded the maximum allowable limit of 320 standard liters per minute (SLM) specified in the Technical Specifications (TS). When leak tested, test results demonstrated gross seat leakage.

TS Section 6.20.A requires that peak Primary Containment internal pressure for the design basis loss of coolant accident (Pa) is 45 pounds per square inch gauge (psig). The maximum allowable Primary Containment leakage rate (La) at Pa shall be 1.5 percent of Primary Containment air weight per day. The maximum TS allowable leakage per day equates to 320 standard liters per minute (SLM).

Test methods for the combined test of the MSIVs requires that pressure be applied between the inboard MSIV and the outboard MSIV. For the individual test of outboard valve 29AOV-86D, the Main Steam Line upstream of inboard MSIV is filled with water. During the fill evolution, excessive water leakage occurred past the valve seat of 29AOV-80D. Due to this excessive leakage through inboard MSIV, the "D" inboard MSIV was classified as having gross leakage.

Individual leakage testing of the outboard valve was unsuccessful due to the inboard valve disc assembly not being properly aligned with the valve seat. After draining the inboard Main Steam Line, combined testing of the inboard and outboard MSIVs indicated leakage exceeding the ability of the test equipment to achieve test pressure. The test volume could not be pressurized by the leak rate monitor, which has a 400 slm maximum flow rate. Leakage observed at vents located upstream of the inboard valve and downstream of the outboard valve indicated excess leakage through both valves. This resulted in also declaring the outboard valve as having gross seat leakage. Combined leakage of the inboard and outboard MSIVs was in excess of 400 SLM.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3	OF 5
James A. FitzPatrick Nuclear Power Plant	05000333	00	015	00		

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

Cause of Event

The excessive leakage rate of inboard MSIV 29AOV-80D was attributed to valve stroke disc to seat misalignment. The excessive leakage rate of outboard MSIV 29AOV-86D was attributed to seat scoring in the valve seat area.

Previous valve failure evaluations identified the need for valve modifications/enhancements, due in part to LLRT methodology and valve orientation. Improvements to valves 29AOV-80D and 29AOV-86D are identified in the corrective actions. Additional actions will be provided in the supplement to this LER.

Analysis of the Event

This report is being submitted in accordance with 10 CFR 50.73(a)(2)(ii), "Any event or condition that results in the nuclear power plant including its principal safety barriers, being seriously degraded."

The Primary Containment System has the capability to limit leakage during any of the postulated design basis accidents for which it is assumed to be functional such that offsite doses do not exceed the guideline values set forth in 10 CFR 100. Compliance with 10 CFR 50, Appendix J provides assurance that the Primary containment, including those systems which penetrate the primary Containment do not exceed the allowable leakage rate specified in the TS.

Immediate actions were not required as the plant was in a shutdown condition and Work Orders were already in place to repair the valves. All MSIVs that exceeded the TS leak rate limit were rebuilt and successfully tested prior to startup from the Refuel Outage.

The potential radiological consequences of the as-found condition of the MSIVs is under investigation and will be quantified in a supplement to this LER.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
James A. FitzPatrick Nuclear Power Plant	05000333	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 5
		00	015	00	

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

Extent of Condition

At the conclusion of LLRTs, it was identified that as-found leakage rates for MSIVs 29AOV-80B, 29AOV-86B and 29AOV-86C had exceeded the Technical Specifications (TS Section 4.7.A.2.b, Surveillance Requirements, "Primary Containment") leakage rate acceptance criteria of ≤ 11.5 scfh (5.422 SLM) per valve when tested at ≥ 25 psig. Therefore, valves 29AOV-80B and 29AOV-86B were also considered significant contributors to exceeding the maximum allowable Primary Containment leakage rate (La) of 320 SLM.

Corrective Actions

1. Work Requests (WRs) were generated and repair activities were completed on MSIVs 29AOV-80B, 29AOV-80D, 29AOV-86B, 29AOV-86C and 29AOV-86D. Additionally, modification work, consisting of MSIV improvements/enhancements, based on previous valve failure evaluations and valve vendor recommendations, were completed on the following MSIVs:
 - 29AOV-80D - Installation of guide pads to the valve body to control valve disc to valve body clearance and improve valve disc to seat alignment, and installation of a new ring/spacer configuration to aid in improving stem alignment and reduce stem to spacer galling.
 - 29AOV-86D - Installation of hardened washers on valve bonnet to reduce torque transfer losses and eliminate bonnet leakage, installation of hardened washers on both ends of the live load spring to reduce torque losses for added packing pressure for better control of packing leakage, and installation of a the new ring/spacer configuration. Additionally, a rebuilt/certified actuator was installed and the spring pack between the actuator and valve was replaced with new yoke guides and bronze bushings to reduce close/open friction loads.
2. The cause(s) for the leak rate failure of the MSIVs and other LLRT failures are under investigation and will be reported in a supplement to this LER. **(Scheduled Completion Date: March 2, 2001)**
3. The potential radiological consequences of the as-found condition of the MSIVs is under investigation and will be quantified in the supplement to this LER. **(Scheduled Completion Date: March 2, 2001)**

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)	
James A. FitzPatrick Nuclear Power Plant	05000333	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	5 OF 5	
		00	015	00		

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

Additional Information

A. Previous Similar Events:

LER 98-013 and LER 96-012 reported Primary Containment accumulated leakage in excess of maximum allowed by the TS.

B. Failed Components:

Component Identification: Main Steam Line Inboard/Outboard Isolation Valves

Component Mark Numbers: 29AOV-80D, 29AOV-86D

Component Description: 24 inch (angled) Globe Valves (Flite-Flow)

Manufacturer: Edward Valves, Inc.

Model Number: 1612 JMMNY

Design Code: ANSI B31.1.0

Rating: 1250 psi

C. Applicability to NEI 99-02, Rev.0:

This event did not result in a Safety System Functional Failure.