James A. FitzPatrick Nuclear Power Plant 268 Lake Road P.O. Box 41 Lycoming, New York 13093

315-342-3840

J



Michael J. Colomb Site Executive Officer

February 26, 1998 JAFP-98-0077

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-98-001

invalid Isolations of Reactor Building Ventilation and Associated Actions

Dear Sir:

This report is submitted in accordance with 10 CFR 50.73 (a)(2)(iv), (a)(2)(v)(C), and (a)(2)(v)(D).

There are no commitments contained in this report.

Questions concerning this report may be addressed to Mr. Richard A. Plasse, Jr. at (315) 349-6793.

Very truly yours,

MICHAEL J. COLOMB

MJC:RAP:las Enclosure

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

9803050308 98022 050 ADOCK PDR

IE22'



U.S. NUCLEAR REGULATORY COMMISSION (4-95) LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)									APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THE MANDATORY INFORMATION COLLECTION REQUEST 500 HRS REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY FORWAR COMMINTS REGARDING BURDEN ESTIMATE TO THE INFORMATION 'NI R*CORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULA : R COMMISSION VASHINGTON DC 20555-0001 AND TO THE P/PERIVOR REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AN BUDGET. WASHINGTON DC 20503							
FACILITY N	AME (1)			energy provides and all labor					DOCKET	NU	MBER (2)		PAGE (3)			
James	A. Fit	zPatric	k Nuclear	Power Pla	nt						05000333			01 0	DF 06	
Invalid	Isolat	tions o	f Reactor I	Building V	entilation	n and A	ssoci	ated A	ctions							
EVEN	IT DAT	E (5)	LE	R NUMBER (	6) DEV/8/04	REPO	RTDA	YEAR	FACILITY NAM		OTHER FACILIT	TIES INV	DOCI	VED (8	) ABER	
MONTH		YEAR	YEAR	NUMBER	NUMBER	MONTH	NTH DAY		N/A				05000			
01	28	30	98	001	00	02	26	98	FACILITY N/A	N	AME		DOCKET NUMBER			
OF ERA MODE	TINC (9)	N	THIS REPO	RT IS SUBMI		20 2203	(a)(2)(v	REQUI	REMENT	5	OF 10 CFR §: (C	heck one	10 6	more) 50.73(	(11) a)(2)(viii)	
LEVEL	ER (10)	100	20.2203(a)(1) 20.2203(a)(2)(i) 20.2203(a)(2)(ii)			20.2203(a)(3)(i) 20.2203(a)(3)(ii) 20.2203(a)(4) 50.36(c)(1)			50.73(a)(2)(ii)				50.73(a)(2)(x)			
PART NOT TRACE OF LOS		aprovinented							X	5	0.73(a)(2)(iv)		OTHER		R	
			20.2203	X	( 50.73(a)(2)(v)				Specify in Abstract be							
		בטורטונא אל דערום	20.2203	20.2203(a)(2)(iv) 5				50.36(c)(2)			50.73(a)(2)(vii)			OF IN NICE FURNE SOUR		
Richar	d A. F	Plasse,	Jr Sr. Li	censina E	ngineer	E CONTA	ICT FO	RTHIS	LER (12)	TT	HONE NUMBER (Include	) 349-6	•) 679	3		
			COMPLETE	ONE LINE FO	DR EACH (	COMPON	ENT FA	AILURE	DESCRI	BE	D IN THIS REPOR	RT (13)				
CAUSE	8	YSTEM	COMPONENT	MANUFACTU	RER TO N	RTABLE		CAUSE	SY	STI	EM COMPONENT	MANU	FACT	URER	TO NPRDS	
		SI	IPPLEMENT		EXPECTED	) (14)			acar perme				14		U LUEAR	

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

On 1/30/28 at 0946 hours with the plant operating at full power, a spurious invalid isolation signal of the Reactor Building balow Refuel Floor ventilation exhaust radiation monitor 17RM-452B occurred. This resulted in an Engineered Safety Feature actuation with isolation of the Reactor Building Ventilation System, B side primary containment atmosphere sampling system and start of the B Standby Gas Treatment (SGT) System.

X NO

Radiation monitor 17RM-452B was removed from service for troubleshooting. At the time, the A SGT System was also removed from service for planned maintenance. This resulted a plant configuration where the remaining operable B SGT System did not have an auto-start function for a high atton condition in the below Refuel Floor ventilation exhaust system.

(If yes, complete EXPECTED SUBMISSION DATE).

On 2/18/98, the plant was operating at full power when ther spurious isolation signal from 17RM-452B resulted in that procedure deficiencies, training deficiencies, and the operations staff failure to perform adequate independent lessons learned.

the same ESF actuation discussed above. Troubleshoot efforts have not determined the cause of the spurious isolations. A Root Cause Analysis of the removal of 17 452B from service during the A SGT maintenance indicates reviews were contributing causes. Corrective actions include procedure revisions, training, and plant staff review of the

EXPECTED

SUBMISSION

**DATE (15)** 

YES

2

NRC FORM 366A (4-95) LICENSEE EVEN TEXT CON	T REPORT (I	LER)	J.S. NUCLEAR F	EGULATO	RY CO	MMIS	SION
FACILITY NAME (1)	DOCKET		LER NUMBER	(6)	P	AGE	(3)
Lange A. FileBatrick Musica David Bland	05000000	YEAR	SEGUENTIAL NUMBER	NUMBER			
James A. FitzPatrick Nuclear Power Plant	05000333	98	001	00	02	OF	06

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

EllS Codes are in []

### EVENT DESCRIPTION

On January 28, 1998, with the plant operating at 100 percent power, a scheduled 7-day Limiting Condition for Operation (LCO) was in progress on the A Standby Gas Treatment (SGT) [BH] System to allow planned maintenance activities. At 0946 hours, a spurious invalid isolation signal of the Reactor Building (secondary containment) [NG] below Refuel Floor ventilation exhaust [VA] radiation monitor B occurred. The spurious isolation signal resulted in isolation of the B side Reactor Building Ventilation System, the B side primary containment sampling system [BB], and the initiation of the B side SGT. All equipment functioned as designed ar.d the systems were restored to normal at 1030 hours.

The Instrument and Control (I&C) Department was requested to remove the B Reactor Building below Refuel Floor ventilation exhaust radiation monitor (17RM-452B) from service. The monitor was removed from service at 1055 hours. This action resulted in disabling the associated B side automatic isolations and the auto start of the B side SGT from a high radiation condition in the below Refuel Floor ventilation exhaust monitor, 17RM-452B.

At approximately 1500 hours, the NRC Resident Inspector questioned the remcval of 17RM-452B from service while the A SGT system was removed from service for planned maintenance. The Work Control Center Supervisor and the Inspector determined that the remaining operable B SGT system would not have automatically initiated in the event of a high radiation condition in the Reactor Building below Refuel Floor exhaust path. The A Reactor Building below Refuel Floor exhaust ventilation monitor (17RM-452A) was operable and would have provided the A side isolations, but it initiates only the A SGT system (which was inoperable due to the planned LCO maintenance).

The Shift Manager verified the condition and isolated the Reactor Building and initiated B SGT system at 1549 hours. The A SGT system was declared operable and the planned maintenance LCO was exited at 1835 hours. This resulted in the A SGT system being capable of automatic initiation from the operable below Refuel Floor exhaust radiation monitor (17RM-452A). At 1932 hours, the Reactor Building was unisolated, the ventilation system was returned to a normal lineup, and the B SGT system was secured.

Initial troubleshooting of the radiation monitor (17RM-452B) attributed the spiking to a failed detector. I&C replaced the detector and properly returned the radiation monitor to service after satisfactory testing.

On February 18, 1998, the plant was operating at full power when a spurious invalid isolation signal recurred on the same radiation monitor (17RM-452B). This resulted in the same Engineering Safety Feature (ESF) actuation discussed above. All equipment functioned as designed. I&C removed the monitor from service to support troubleshooting. Based on the ongoing design basis review, as a precautionary measure, the operators maintained the Reactor Building isolated with the B SGT System in service during the troubleshooting efforts.

NRC FORM 366A (4-95)	n de trois e de la constant de la co	1	J.S. NUCLEAR P	REGULATOR	RY CO	MMIS	SION
LICENSEE EV TEXT C	ENT REPORT (1 CONTINUATION	ER)					
FACILITY NAME (1)	DOCKET		LER NUMBER	(6)	P	AGE	(3)
James A. EitzBatelah Muslaas Down Diant	05000000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		~	
Sames A. FitzPatrick Nuclear Power Plant	05000333	98	001 00		03	OF	06

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

# EVENT CAUSE

The exact cause of the spurious radiation monitor trips has not been determined. The I&C Department conducted radiation monitor functional tests and cable connection integrity checks and found no failures. As of the date of this report, I&C has replaced the radiation monitor detector and the power supply. A temporary modification has been initiated to monitor and record detector performance and power supply voltages. No abnormal operation of plant equipment preceding, or during the isolation coents occurred.

On January 28, 1998 due to the monitor spikes, 17RM-452B was removed from service concurrent with the A SGT system being removed from service for a planned maintenance LCO. The Operations shift failed to recognize the effects of removing this radiation monitor from service on the operable B SGT system. The Operators involved failed to perform independent reviews. The operators performed an inadequate review of the Technical Specifications (TS) when researching the LCO for 17RM-452B removal from service. There were two contributing causes to the personnel error; (1) the procedure which removed the monitor from service, OP-31, "Process Radiation Monitoring System", and (2) the applicable TS referenced by the procedure, had no reference to the SGT system when removing a monitor from service. Specifically, Radiological Effluent Technical Specification (RETS) Table 3.10-1 allows the removal of one Reactor Building Ventilation Radiation Monitor with no required action.

As part of the Root Cause Analysis, a plant review was done to look for similar occurrences. This review identified an event in January 1995 associated with the radiation monitor logic circuit. Although the event was not similiar, the impact of the monitor on the SGT system was questioned at that time. The plant review, documented in a memorandum, recommended a corrective action for applicable departments to review procedures that remove Reactor Building radiation monitors from service, and provide a caution against removing a radiation monitor with the opposite side of SGT out-of-service. This recommendation was not formally tracked or documented in the plant corrective action program.

During a review of protective tagout records performance since 1995, there were two other instances where a Reactor Building radiation monitor was removed from service and the opposite side of SGT was inoperable. In both instances, the reactor was defueled with no fuel handling in progress and thus secondary containment was not required.

# EVENT ANALYSIS

In both spurious isolation events, isolation of the B Reactor Building Ventilation System and B side Primary Containment Sampling System and initiation of the B SGT system, is reportable under provisions of 10 CFR 50.73 (a)(2)(iv) as an invalid ESF actuation not specifically exempted by 10 CFR 50.73 (a)(2)(iv)(B) due to the fact that the B side Primary Containment Sampling System valves are components of the containment isolation system. In both events, the I&C Department completed troubleshooting efforts of the monitor system, replaced components, completed testing, and returned the monitor to service. The I&C Department continues to monitor component performance, as a definitive root cause of the spurious signal could not be determined.

NRC FORM 366A (4-95) LICENSEE EVE TEXT CC	NT REPORT (I	ER)	J.S. NUCLEAR F	EGULATOP	RY CON	AMISS	SION
FACILITY NAME (1)	DOCKET	T	LER NUMBER	(6)	PA	GE (	3)
James & EitzBatzick Musicas Bours Blant	05000000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		and and a	
James A. FitzPatrick Nuclear Power Plant	05000333	98	001	001 00		OF	06

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

# EVENT ANALYSIS (cont'd.)

The function of the Reactor Building ventilation exhaust radiation monitors is to provide continuous monitoring of the Reactor Building exhaust flow path to ensure gaseous releases are maintained below 10 CFR 20 limits. RETS Section 3.1 requires that at least one monitor be operable while the flow path is in service. The monitors also function to isolate the secondary containment and provide an auto-start to the applicable SGT system. The plant configuration, during initial troubleshooting of the monitor (17RM-452B), resulted in a condition where the flow path was monitored for gaseous release as required by TS Section 3.1. In the event of a high radiation condition in the exhaust flow path, the Reactor Building exhaust system would have secured automatically and provided the required "A" side isolations of the secondary containment. The SGT system, however, would not auto-start on a valid isolation of the Reactor Building exhaust line. This could have prevented or delayed diversion of exhaust flow to the plant stack (elevated release) in the event of an actual radiation release through the ventilation system. As a result, this condition is reportable pursuant to 10 CFR 50.73 (a)(2)(v)(C) and (D).

In addition to the Reactor Building ventilation exhaust monitor, several other auto start signals to the B SGT system were still operable. The B SGT system would have started upon occurrence of a high radiation signal from B Refueling Floor ventilation exhaust monitoring, a High Pressure Coolant Injection initiation signal, high drywell pressure, or low reactor vessel level. Therefore, this event was not safety significant and it appears, based on initial engineering review, that the B SGT System would still have performed its required function for design basis accidents.

## CORRECTIVE ACTIONS

Plant management recognized that the Operations crew failed to identify the impact of removing 17RM-452B on related equipment during an existing planned LCO maintenance activity. This is similar to weaknesses identified in a previous event (LER-97-011). A root cause analysis for this event was performed to ensure all performance issues and lessons learned were identified. The root causes from this event were determined to be different than the previous event. The following corrective actions were identified to prevent recurrence of a similar event.

- Operations Department revised ODSO-34, "TS LCO and Maintenance Rule Unavailability Tracking ", to ensure that independent reviews of TS are performed prior to removing equipment from service. The LCO tracking sheet was also revised to include consideration of the impact on existing LCOs when removing equipment from service. (Completed: 2/18/98)
- The Operations Manager has briefed the operators on the details of this event. The lessons learned from the root cause analysis will be reviewed by Operations management with the operating crews. (Scheduled Completion Date: 3/27/98)

NRC I	ORM 366A	an ann an fhar ann an ann ann ann an ann ann an ann an		U.S. NUCLEAR REGULATO	RY COMMISSIO
14.861		LICENSEE EVI	ENT REPORT ()	LER)	
	FACILIT	Y NAME (1)	DOCKET	LER NUMBER (6)	PAGE (3)
lam	A FitzPatrick Nucla	ar Power Plant	05000222	YEAR SEQUENTIAL REVISION NUMBER NUMBER	
Jann	a rizration nucle	ar rower riant	05000333	98 001 00	105 OF 06
TEXT	(If more space is required, use	e additional copies of NRC Form 30	66A) (17)		
COF	RECTIVE ACTIONS	(cont'd.)			
3.	Actions will be take on removing a Rea from service (Sch	n to ensure that applicabl ctor Building radiation mo	le Licensed Opera initor from service	ator training material include with the opposite side of S	es a caution GT removed
	nom service. (sen	eduled completion bate	. ////////		
4.	Review and revise ventilation radiation service. (Schedule	all applicable plant proceed monitor from service whe ad Completion Date: 6/1	dures to caution a en the opposite Si 1/98)	gainst removing a Reactor GT system is already remo	Building ved from
5.	An Equipment Failu Initial investigation only possible cause to monitor the radia spurious signal, a s	are Evaluation (EFE) of the indicated a bad detector. I of the spurious signal. Intion monitor performance supplement to this LER with	e subject radiation Based on the red The monitor has b . If the monitoring ill be issued.	n monitor (17RM-452B) is in currence, this does not appr been returned to service. I8 g determines a different cau	n progress. ear to be the &C continues use for the
6.	Plant management Building ventilation of this review, a ne 3/27/98)	initiated a licensing and c radiation monitor systems ed for a TS amendment	design basis revier s as contained in t will be determined	w of the Refuel Floor and R the TS and FSAR. Based o d. (Scheduled Completio	Reactor on the result n Date:
7.	Plant personnel we importance of track program. (Comple	re briefed on the details of ing recommendations whe ted: 2/26/98)	of this event and t en identified by ut	he lessons learned, stressir ilizing the plant corrective a	ng the action
8.	Submit a Technical address effects on associated radiation	Specification change, if on Reactor Building isolation monitor out-of-service.	determined to be a ns and Standby G (Scheduled Com	appropriate, to RETS Table as Treatment actuation with pletion Date: 6/30/98)	e 3.10-1, to h the
ADD	TIONAL INFORMAT	ON			
Prev	ious Similar Events:	LER-92-023 reported a exhaus, radiation monit	a similar event who tors were made in	ere both Reactor Building v noperable due to personnel	entilation errors.
		LERs: 89-013, 92-039, engineering safety feat maintenance activities	92-040, 92-046, a ture actuations. T (i.e. jumpering or	and 95-009 described simila hese events occurred durin lifted leads).	ar unplanned 19

. . . .

NRC FORM 366A

U.S. NUCLEAR REGULATORY COMMISSION

#### LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)				PAGE (3)		
Jamus A. EitzPatrick Nuclear Power Plant	05000000	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER				
Sames A. Fizzatrick Nuclear Fower Flant	05000333	98	001	00	06	OF	06	

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

#### ADDITIONAL INFORMATION (cont'd.)

Extent of Condition: The root cause evaluation identified that licensed operators may not have been referring to TS bases consistently when determining LCO actions. TS decisions were being based on TS LCO and surveillance requirements sections. In addition, RETS Table 3.10-1 allowed removal of the radiation monitor. Other TS guidance could lead to similar events. This event has been reviewed by the operators to increase awareness and sensitivity to plant impact when removing equipment from service. Procedure changes, formal training, and reviews of the lessons learned from the root cause are in progress. A licensing/design basis review was initiated to determine if a TS change is appropriate.

The cause of the spurious signal has not been determined. A supplement to this LER will be provided if a different cause is identified. Other radiation monitors will be reviewed if determined to be susceptible to the cause.

Recommended actions in a memorandum to file could have prevented this event, but were not formally tracked in the plant corrective action program. Plant staff were briefed on this aspect to reinforce the need to track potential problems to ensure appropriate corrective actions are completed.