James A. FitzPatrick Nuclear Power Plant P.O. Box 41 Lycoming, New York 13093 315 342-3840



William Fernandez II **Resident Manager**

TE22

1)

December 3, 1990 JAFP-90-0863

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

SUBJECT: DOCKET NO. 50-333 LICENSEE EVENT REPORT:

90-024-00 Partial Group II Primary Containment Isolation

Dear Sir:

Ŕ

This Licensee Event Report is submitted in accordance with 10 CFR 50.73(a)(2)(iv).

Questions concerning this report may be addressed to Mr. Hamilton Fish at (315) 349-6013.

Very truly yours,

WILLIAM FERNANBEZ

9012120198 901203 PDR ADOCK 05000333

PDC

WF:HCF:lar

Enclosure

cc: USNRC, Region I USNRC Resident Inspector INPO Records Center American Nuclear Insurers

P229764409

MC Ferm 100 9-63)	LIC	ENSEE EVE	NT RE	PORT	(LER)	U.S. MA	ACLEAR REQUE	A TORY COMMENSEN NO. 31800194
ACILITY NAME IN JAMES A. FITZPATRICK NUC	LEAR PO Primary	VER PLANT Containme	nt Gr	oup 1	(I Isolati	O [6 [0]0	10 3 3 11 Due t	3 1 OF 0 o Blown
FUSE DUE LO HUMAN ETTOTS D	iring /	AEPORT CATS	ion o	t Pro	OTHER OTHER	Agging P	rocedure	-
DATH DAY YEAR YEAR BOUGHTIAL TH MUCH MONTH DAY YEAR FACILITY HAA							DOCKET NUME	MAIG
	T	a search and a second se					0 15 10 1	0 0 1 1
1 1 0 1 9 0 9 0 0 2 4	-010	1 2 0 3	9 0				0 6 0	0 0 1 1
Constraction M 28.402 fb) POWER 28.402 fb) 28.402 fb) POWER 28.402 fb) 28.402 fb) LEVEL 1 0 28.402 fb) 28.402 fb) 28.402 fb) 28.402 fb)		20.405(a) 80.25(a)(1) 80.25(a)(2) 90.73(a)(2)(1) 90.73(a)(2)(1) 90.73(a)(2)(1)		X	00.734a) C2) (iv) 00.734a) C2) (iv) 00.734a) C2) (vi) 00.734a) C2) (vii) (a) 00.734a) C2) (viii) (a) 00.734a) C2) (viii) (a) 00.734a) C2) (viii) (a)) , pan university (1	11 72,71 6a/ 73,71 6a/ 73,71 6a/ 071-48 / 0 201-48 / 0 201-48 / 0 201-48 / 0 201-48 / 0	BaseNy in Aberrari I In Taxt, NRC Parn
AME	L	CENBER CONTACT	OR THE	LER (13)				
Hamilton C. Fish						3 1 5	3 6 9 -	-160111
COMPLETE	PA BHIL BA	EACH CONPONENT	AILURE	DESCRIBE	D IN THIS REPORT	(130	hannah- 'naharinaha magine anan yananan	مىلىكە كەركەن مەلىرىكە ئەركەن ئەركەن
AUBE SYSTEM COMPONENT MANUPAC.	TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUPAC TURER	TO NPROS	1. S.
A WIRSIOLL ADDIZ	Y					111		
				.	1111	1.1.1	4.11.12	Charles .
BUPPLEASEN YES (If we, camping EXPECTED SUGAISSEON DATE) STRACT (Limit to 1400 associ. (A. caparasimator) Physics 4	TAL REPORT	EXPECTED (14)				EXPRCTE SUGMISSIC DATE (18		H DAY YA
EIIS Codes are in [] While the reactor a high level alarm for drain sump was receiv actuation of the B si System (PCIS) [JM]. isolated and Standby Three valves that rec Two others closed as 37 minutes. A repair valve unexpectedly ex of the Residual Heat and radioactive resir and poor communication protective tagging pr from the valve but wa errors. An automatic energized the solenoi current and opening of of protective tagging necessary when priori tagging review, was s human performance enh conducted.	or was or the ed. 1 de of The re Gas The eive t design task tended Remova task tended sign d task to cedu sign d dama f the reque tresse anceme	operatir primary A fuse op the Grou eactor bu reatment the isola ned. The on a sma dover the al System sfer was ween shift re implem t electric al from t aging the fuse. The sts and olutions ed to per eant system	ng at cont bened ip II ildi B (S ation b is all s in p fts c all s in p fts c all s in p fts c in p	t 100 tainn l at Pri BBGT) blati soler soler soler soler soler soler tion tion tion tion tion tion tion tion	0% power nent (dr 2338 re imary Co ventilat [BH] s nal wer noid ope fts duri as being ress. M red dur n. The onnected high le tion res tance o to del ime avai In add v of thi	at 233 ywell) sulting ntainme ion sys tarted e alrea e reset rated a ng whic restor ultiple ing equ solenoi due to vel sub ulting f thoro ay work lable f ition, s event	2 on 1 equipme in a p nt Iso tem [V] as des dy clos within ir adm ir adm hone t ed to s human ipment d was n the hu sequent in high ugh res , if or prot a forma	1/01/90 ent partial lation A] igned. sed. n ission train service errors removed uman tly search tective al ing

LICEPSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION APPROVED OMB NO. 3150-0104

 EXPIRES B/31/86

 FACILITY NAME (1: JAMES A, FITZ PATRICK
 LER NUMBER (2)
 LER NUMBER (6)
 PAGE (3)

 JAMES A, FITZ PATRICK
 VEAR
 SEQUENTIAL
 REVISION NUMBER
 PAGE (3)

 NUCLEAR POWER PLANT
 0 5 0 0 0 3 3 3 9 0 --- 0 2 4 --- 0 0 0 2 0 F 0 4
 0 2 0 F 0 4

EIIS Codes are in []

Description

NRC Form 366A

The reactor was operating at full power on November 1, 1990. A high level alarm for the primary containment (drywell) equipment drain sump was received at 2332. Six minutes later, at 2338, fuse 16A-F22 opened resulting in a partial actuation of the B side of the Group II Primary Containment Isolation System (PCIS) [JM]. The partial isolation resulted in isolation of the reactor building ventilation system [VA], initiation of the B train of the Standby Gas Treatment System (SBGT) [BH], closure of the outboard containment isolation valve for the drywell floor drain [WK] sump discharge, closure of containment atmosphere sample valves, and close signals to three containment isolation valves which, because of the plant operating mode, were already closed.

The outboard containment isolation valve for the drywell equipment [WK] drain sump discharge (20A0V-95) also received a close signal. However, the solenoid for the air supply to the operator (20SOV-95) had been removed to facilitate maintenance of the operator and was not mechanically connected to the valve. The outboard valve had been manually positioned in the open position. The inboard isolation valve (20MOV-94) was in the closed position and deenergized. At 0015 cm November 2, 1990, 37 minutes after the isolation, the fuse which had opened (16A-F22) was replaced. The isolation system and reactor building ventilation were reset and the standby gas treatment system was returned to standby.

Cause

The partial isolation of the B logic train of the PCIS resulted from the opening of fuse 16A-F22, as designed, due to excessive current flow. The excessive current flow resulted from a short circuit in the solenoid coil for the air supply valve (20SOV-95) for the drywell equipment drain sump discharge outboard isolation valve (20AOV-95). Solenoid damage is postulated to have been caused by high current flow in the coil caused by energizing it after the operating plunger had previously been physically removed for maintenance. This resulted in lowered impedance, current flow in excess of design, and ultimately overheating and damage to coil insulation. The plunger core and valve actuator had been removed to perform maintenance. Because of a failure to properly isolate the coil electrically prior to performing the maintenance, it was automatically energized upon receipt of a high level signal from the equipment drain sump. The failure to

HIRC FORT GERA		U.S. NUCLEAR RED	ULATORY COMMISSION
LICENSEE	EVENT REPORT (LER) TEXT CONT	INUATION APPROVED D EXPIRES BO	MB NO 3180-0104 1785
FACILITY NAME (1)	DOCKEY NUMBER (2)	LER NUMBER (8)	PAGE (3)
JAMES A. FITZPATRICK		VEAR SEDUENTAL NUMBER NUMBER	

TEXY IN more space is required, use additional NRC Form 305A (s) (17)

NUCLEAR POWER PLANT

electrically isolate the coil was the result of multiple human errors during implementation of the Protective Tagging Request (PTR) procedure (WACP-10.1.2). These human errors were contributed to:

- a) unanticipated extension of the maintenance task through three shift turnovers
- b) multiple interruptions of the maintenance task to facilitate transfer of radioactive filter sludge resins through pipes near the area of valve maintenance

0 16 10 10 10 13 13 13 19 10 - 0 12 14 - 0 10 0 13 OF 0 14

c) the priorities of simultaneous evolutions to return one side of the Residual Heat Removal (RHR) [B0] system to service within a Limiting Condition for Operation and a previously scheduled transfer of radioactive filter sludge, and the necessity to pump out the drywall figurement drain sump on a regular basis.

Five days prior to this event on October 26th, the containment (drywell) equipment drain sump pump discharge outboard containment isolation valve (20AOV-95) had failed a guarterly surveillance test (ST-1U). The valve failed to go fully closed when air was bled from the supply header. Air leaks were found in the supply line fittings and tightened. The calve was retested successfully. Five days later at 0400 on November 1st during an unrelated quarterly surveillance test (ST-1C), the valve required 0.67 seconds longer to close than the ASME Section XI (IST) acceptance criteria of less than 2 seconds. Inspection during the next (day) shift found symptoms of failure of an internal O-ring in the Xomax actuator which would require disassembly of the solenoid operated air admission valve (20SOV-95). A Protective Tagging Request (PTR) was prepared during the day shift requesting both mechanical and electrical isolation of the valve. Subsequent human errors extending over two shifts resulted in a failure to electrically isolate the solencid. Between 1700 and 1930 the solenoid was damaged when it was energized by a high level signal from the drain sump. Although this damage was discovered around 2000, continuing human errors left the solenoid electrically connected in the PCIS circuit. The excess current draw of the coil during a subsequent high sump level at 2332 was sufficient to open the fuse in the circuit after six minutes. This caused the partial isolation of the PCIS at 2338.

Analysis

Tripping of the PCIS logic circuits is an Engineered Safety Feature Actuation [JE] and is therefore reportable under the provisions of 10 CFR 50.73(a)(2)(iv). There were no system or equipment failures (other than the initiating solenoid failure). All systems and equipment performed in accordance with design. The isolated systems were restored within 37 minutes of the isolation. Who Fest 766 LICENSEE EVENT REPORT (LER) TEXT CONTINUATION EXPIRES EDIALS

U.S. NUCLEAR REQULATORY COMMISSION APPROVED DMB ND 3150-D104

FACILITY NAME IT	DO	REKE	TNU	ILAB E	R (2)					LE	RNU	ABER	6)					-	3	
JAMES A. FITZPATRICK									VEAR		SECU	ENT:A MBER	T	RI RI	UNBER					
NUCLEAR POWER PLANT	0	15	10	10	010	3	3	3	910		01	2 4			010	0	14	OF	0	14
TEXT (If more space is required, use additional NRC Form 3864's) (17)	and the same					-	- Actives	-	discontinuous and		to manage the	and the second	contena a					descent.	-	-

Corrective Action

The isolation was reset. The reactor building ventilation isolation was reset. The B train of the Standby Gas Treatment System was secured. A new Protective Tagging Request (PTR) was written to lift a lead to isolate the solenoid coil.

The individuals responsible for review of this PTR discussed the significance of the event and the possible causes with the Assistant Operations Superintendent. The importance of adequate review of PTRs to maintain plant safety was emphasized. Through use of the night order book, all Operations personnel were advised of the event and reminded of the importance of thorough PTR review prior to issue. In particular, the importance of researching the connections to circuits designed as "trip circuits" and the necessity of withholding issuance of PTRs, if current evolutions did not permit sufficient time for thorough review, was emphasized. In addition, a formal human performance enhancement system (HPES) review of this event is being conducted. Other corrective action may result from this review.

Additional Information

The following LERs have elements in common with this LER:

89-017	PCIS 1	solation	due	to hur	nan error	- not	find	ing isolation	ł.
	signal	present	in	wiring	diagram	during	FTR	review	

89-013 FCIS	isolation	due	to	human	error	- 0	lectrical	grounding
-------------	-----------	-----	----	-------	-------	-----	-----------	-----------

RCIC isolation due to human error - not following procedure 87-016

RCIC isolation due to human error - electrical grounding 86-019

Failed Component Data

Plant Component Identification: 20SOV-95(OP) Description: Solenoid Valve Operating Coil NPRDS Component Code: VALVOP NPRDS Vendor Code: A002 Vendor: AAA Products Model: S02 Design Current: 0.36 Amps Design Voltage: 120 VAC