

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9205040292 DOC. DATE: 92/04/25 NOTARIZED: NO DOCKET #  
 FACIL: 50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251  
 AUTH. NAME AUTHOR AFFILIATION  
 KNORR, J.E. Florida Power & Light Co.  
 PLUNKETT, T.F. Florida Power & Light Co.  
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-004-00: on 920326, reactor trip occurred, resulting in Train B SI & Train B containment Phase A isolation. Caused by worn test switch & procedural inadequacy. Switch replaced & procedure revised. W/920424 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: NRR RAGHAVAN, L

05000251

RECIPIENT ID CODE/NAME	COPIES LTTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR ENCL
PD2-2 LA	1 1	PD2-2 PD	1 1
AULUCK, R	1 1		
INTERNAL: ACNW	2 2	AEOD/DOA	1 1
AEOD/DSP/TPAB	1 1	AEOD/ROAB/DSP	2 2
NRR/DET/EMEB 7E	1 1	NRR/DLPQ/LHFB10	1 1
NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB	1 1
NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
NRR/DST/SICB8H3	1 1	NRR/DST/SPLB8D1	1 1
NRR/DST/SRXB 8E	1 1	REG FILE 02	1 1
RES/DSIR/EIB	1 1	RGN2 FILE 01	1 1
EXTERNAL: EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
NRC PDR	1 1	NSIC MURPHY, G.A	1 1
NSIC POORE, W.	1 1	NUDOCS FULL TXT	1 1
NOTES:	1 1		

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,  
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION  
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED  
 TOTAL NUMBER OF COPIES REQUIRED: LTTR 31 ENCL 31

*Handwritten signature/initials*





FPL

P.O. Box 029100, Miami, FL, 33102-9100

APR 2 1992 APR 24 1992

L-92-115

10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Unit 4  
Docket No. 50-251  
Reportable Event: 92-004-00  
Reactor Trip Due to Failure of Switch in Containment  
High Pressure Reactor Trip and Safety Injection  
Initiation Logic.

The attached Licensee Event Report 251-92-004-00 is being  
provided in accordance with 10 CFR 50.73 (a) (2) (iv).

If there are any questions please contact us.

Very truly yours,

*T.F. Plunkett by J.W. Parve*

T. F. Plunkett  
Vice President  
Turkey Point Nuclear

TFP/JEK/jk

enclosures

cc: Stewart D. Ebnetter, Regional Administrator, Region II,  
USNRC,  
Ross C. Butcher, Senior Resident Inspector, USNRC, Turkey  
Point Plant

9205040292 920425  
PDR ADDCK 05000251  
S PDR

*JEK*  
11



# LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

TURKEY POINT UNIT 4

DOCKET NUMBER (2)

05000251

PAGE (3)

1 OF 3

TITLE (4)

Reactor Trip Due to Failure of Switch in Containment High Pressure  
Reactor Trip and Safety Injection Initiation Logic.

EVENT DATE (5)

LER NUMBER (6)

RPT DATE (7)

OTHER FACILITIES INV. (8)

MON	DAY	YR	YR	SEQ #	R#	MON	DAY	YR	FACILITY NAMES	DOCKET # (5)
03	26	92	92	004	00	04	25	92	TURKEY POINT UNIT 3	05000250

OPERATING MODE (9)

1

POWER LEVEL (10)

28

10 CFR 50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER (12)

James E. Knorr, Licensing Engineer

TELEPHONE NUMBER

305-246-6757

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	NPRDS?
X	JE	BLK	G080	Y					

SUPPLEMENTAL REPORT EXPECTED (14) NO ☒ YES ☐  
(if yes, complete EXPECTED SUBMISSION DATE)

EXPECTED  
SUBMISSION  
DATE (15)

MONTH

DAY

YEAR

ABSTRACT (16)

On March 26, 1992, Unit 4 was operating at approximately 28% power. At 1015 hours, during the performance of Procedure OP 4004.4, "Containment Isolation Racks QR50 and QR51 Periodic Test," a reactor trip occurred. All systems responded as designed.

During the completion of OP 4004.4, the two out of three actuation logic was completed but the train 4B initiation signal was not blocked. As a result, a B train Safety Injection, and a B train Containment Phase A Isolation was initiated, followed by an automatic reactor trip.

The cause of the event was a worn test switch resulting in a contact "race" between the actuating contact set and the blocking contact set in the test switches. A contributing cause was a procedural inadequacy.

Corrective actions include switch replacement and a procedure revision.



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	92-004-00	02 OF 03

I. EVENT DESCRIPTION

On March 26, 1992, Unit 4 was operating at approximately 28% power in the process of returning to power after a power reduction. At 1015 hours, during the performance of Procedure OP 4004.4, "Containment Isolation Racks QR50 and QR51 Periodic Test," a reactor trip occurred. All systems responded as designed.

OP 4004.4 is used to complete the surveillance for the Containment High Pressure initiation of Safety Injection and Containment Phase A Isolation. Steps 1 through 4 of the OP 4004.4 test data sheet were performed without incident. Performance of item 1 in Step 5 of the procedure requires the depression of two switch buttons (TS-1 and TS-3 on QR-51) (EIIIS - JE) (IEEE Component - BLK) to simulate the actuation of two out of three channels of High Containment Pressure while simultaneously blocking the initiation of Safety Injection and Containment Phase A Isolation. At 1015 hours during this process the two out of three actuation logic for train 4B was completed, but the train 4B signal was not blocked. As a result, a B train Safety Injection, and a B train Containment Phase A Isolation initiated and an automatic reactor trip occurred.

Step 5 of OP 4004.4 is the first step which tests the two out of three logic for the 10% High Containment Pressure initiation of Safety Injection and Phase A Containment Isolation. The step calls for the operator to depress two test push buttons "in pairs." Each pushbutton has two contact sets, one actuates the logic, while the other blocks the High Containment Pressure signal. For this step to be successful, the switch blocking contacts must be opened either prior to, or simultaneously with, the actuation contacts.

Testing in the instrument rack revealed that the actuating contacts on all three pushbutton switches (TS-1, TS-2, and TS-3) operated prior to the blocking contacts. Therefore, if the buttons were pushed at exactly the same time, it is possible that both channels would actuate prior to the blocking of one of the channels. The TS-1 switch showed a travel difference of 0.027 inches between the actuate and block contact sets. A new switch revealed no measurable travel difference between the contact sets. The TS-1 actuate contact set also demonstrated a tendency to stick in the open position due to a sticking contact arm.

II. EVENT CAUSE

The cause of the event was a switch contact "race" between the actuating contact set and the blocking contact set of test switches TS-1 and TS-3. The outcome of the "race" may have been assured by the sticking actuating contact set on TS-1 which could have been stuck open since step 4 of OP 4004.4. Both the switch travel difference and sticking contact arm problems appear to be due to wear.

A contributing cause was the test directions in step 5 of OP 4004.4. Step 5 instructs the operator to push the buttons in "pairs." Had the step instructed the switches to be depressed in a "push first - hold - push second" manner, the block logic of the first channel would have operated prior to the actuation of the second channel of the two out of three actuation logic. Since at least one block logic would be completed, the trip would not have occurred.





# LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME	DOCKET NUMBER	LER NUMBER	PAGE NO.
TURKEY POINT UNIT 4	05000251	92-004-00	03 OF 03

## III. EVENT SAFETY ANALYSIS

A reactor trip and subsequent shutdown after an inadvertent safety injection is within the design basis of Turkey Point. The switch failure which occurred in this event did not prevent the actuation of a reactor protection system or engineered safety feature due to the failure to block the Containment High Pressure signal. The surveillance testing of the Containment High Pressure signal was a surveillance required by Technical Specifications and is provided for in the design of the plant. The switch failure during the surveillance in this case resulted in a safety injection initiation and reactor trip. The reactor trip occurred after the initiation signal and the plant systems responded as designed with no actual injection into the vessel. Therefore, there was no compromise of the safety of plant personnel or the public as a result of this switch failure.

## IV. CORRECTIVE ACTIONS

1. The test switches in instrument racks QR50 and QR51 for Unit 4 have been replaced.
2. Procedure OP 4004.4 has been revised to avoid simultaneous switch operation and to confirm switch contact status via status lights and test indicating lights. Procedure 4004.4 has been successfully performed for racks QR50 and QR51 on Unit 4.
3. Walkdowns have been performed on other systems to identify other switch applications of this type. The applications found have been evaluated to determine if switch replacement is in order. No potential problems were found except for instrument racks QR50 and QR51 on Unit 3.
4. Switches on Unit 3 instrument racks QR50 and QR51 will be replaced during the next outage of sufficient duration or not later than October 30, 1992.

## V. ADDITIONAL INFORMATION

These switches have previously been analyzed for failures in a 4kv circuit breaker application. That analysis concluded that 2000 cycles of the switch is a conservative estimate as to when the switch would need replacement. The switches in the QR50 and QR 51 application have had approximately 1000 cycles during their life.

Licensee Event Report 250-89-011 was written because of an inadvertent safety injection initiation signal.

The switch manufacturer is General Electric Corporation. The switch block model style number is CR2940.

This event was considered reportable in accordance with 10 CFR 50.73 (a) (2) (iv).

