

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9007060189 DOC.DATE: 90/07/02 NOTARIZED: NO DOCKET #  
 FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250  
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SUBJECT: LER 90-012-00:on 900613,postulated failure of single manual  
 reset pushbutton could render both trains of CS inoperable.  
 W/9 ltr.

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L ST LOBBY WARD	1 1	LPDR	1 1
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JUL 02 1990

L-90-244  
10 CFR 50.73

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

Gentlemen:

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Reportable Event: 90-12  
Date of Event: June 13, 1990  
A Postulated Failure of a Single Manual Reset Pushbutton Could  
Render Both Trains of Containment Spray Inoperable

The attached License Event report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

K. N. Harris  
Vice President  
Turkey Point Nuclear

KNH/DRP/DWH/cml

attachment

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

9007060189 900702  
PDR ADOCK 05000250  
S PDC



## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Turkey Point Unit 3										DOCKET NUMBER (2) 0 5 0 0 0 2 5 0										PAGE (3) 1 OF 4	
TITLE (4) A Postulated Failure Of A Single Manual Reset Pushbutton Could Render Both Trains Of Containment Spray Inoperable																					
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)							
0	6	13	90	012	00	0	7	02	Turkey Point Unit 4					0 5 0 0 0 2 5 1							
OPERATING MODE (9) 1			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																		
POWER LEVEL (10) 0 5 0			20.402(b)				20.406(e)				50.73(a)(2)(iv)				73.71(b)						
			20.408(a)(1)(i)				50.36(e)(1)				50.73(a)(2)(v)				73.71(c)						
			20.408(a)(1)(ii)				50.36(e)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
			20.408(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)										
			20.408(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)										
			20.408(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																					
NAME David R. Powell, Licensing Superintendent												TELEPHONE NUMBER									
												AREA CODE 3 0 5 2 4 6 - 6 5 5 9									
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC											
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR					
YES (If yes, complete EXPECTED SUBMISSION DATE)												X NO									

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

At 1500, on June 13, 1990, with Units 3 and 4 in Mode 1 at 50 percent power and 100 percent power, respectively, FPL determined that use of a single reset pushbutton for both trains of Containment Spray (CS) was outside the design basis of the plants. A postulated failure of the plunger on the first contact block of the reset pushbutton could block both redundant CS trains from automatically actuating upon receipt of concurrent high and high-high containment pressure signals. At 1547, FPL notified the NRC Operations Center of a significant event in accordance with 10CFR50.72(b)(2)(iii)(D). The cause for the condition is an inadequate design. During construction of Turkey Point Units 3 and 4, Westinghouse took credit for the inherent design of the CS reset pushbutton to provide channel independence. However, a single failure of the CS reset pushbutton was not analyzed for adverse impact on design redundancy requirements. The CS reset pushbuttons on Units 3 and 4 were visually inspected. Both reset pushbuttons were verified to be properly reset. Manual actuation of the CS pumps and associated discharge valves are not affected by the postulated failure of the reset pushbutton. Emergency Operating Procedures address manual initiation of CS. FPL Engineering is evaluating the use of a single switch for both trains of a safety function in other applications.



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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Turkey Point Unit 3	0 5 0 0 0 2 5 0	9 0	0 1 2	0 0	0 2	OF	0 4

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

DESCRIPTION OF THE EVENT

On May 18, 1990, Westinghouse notified FPL in writing that a single OT-2 switch may be used for both trains in a number of safety-related functions at Turkey Point Units 3 and 4. From May 18, 1990 to May 29, 1990, approximately 219 Westinghouse OT-2 switches recorded in the Turkey Point Total Equipment Data Base (TEDB) were reviewed for applicability. Additionally, a walkdown of the Control Room was performed to identify other possibly unrecorded Westinghouse OT-2 switches. A total of eight (8) potentially affected switch applications were identified. The eight (8) applications were: Reactor Trip Breaker (RTB) control, Phase A Containment Isolation, Phase B Containment Isolation, Main Steam Isolation Valve (MSIV) isolation, Feedwater (FW) bypass reset, Safety Injection (SI) initiate, Containment Spray (CS) reset, and Turbine Trip initiate.

At 1500, on June 13, 1990, with Units 3 and 4 in Mode 1 at 50 percent power and 100 percent power, respectively, the Plant Nuclear Safety Committee (PNSC) reviewed the results of an engineering evaluation performed on the eight (8) potentially affected switch applications. Two (2) of the eight (8) switch applications (Containment Spray reset and Feedwater bypass reset) were determined to be affected. The failure of a Feedwater bypass reset pushbutton was evaluated not to have an adverse impact on plant safety. Only the Containment Spray (CS) reset pushbutton (EIIS:BE) application was evaluated to have safety significance.

The function of the Containment Spray (CS) System circuitry is to initiate automatic containment spray on concurrent high and high-high containment pressure signals. Containment spray actuation will ensure that containment pressure does not exceed the value assumed during postulated design basis events. This function is derived from two sets of three pressure switches (three switches for high pressure and three switches for high-high pressure). These pressure switches provide input into four auxiliary relays which, in turn, energize the two containment spray safeguards relays. The Containment Spray reset pushbutton is in series with the two safeguards relays. A failure of the plunger on the first contact block of the Containment Spray reset pushbutton could block both safeguards relays from actuating. Therefore, a single failure of the reset pushbutton could block both redundant trains of containment spray from actuating automatically. This configuration does not meet the single failure criteria of IEEE 279-1968, "Standard for Nuclear Plant Protection Systems," committed to in Chapter 7.2 of the Turkey Point Final Safety Analysis Report (FSAR).

At 1547, on June 13, 1990, FPL notified the NRC Operations Center of a significant event in accordance with 10CFR50.72(b)(2)(iii)(D) based on a condition that alone could have prevented the fulfillment of the safety function of a system needed to mitigate the consequences of an accident. Since the switch did not fail, FPL has determined that the initial reportability determination should have been made in accordance with 10CFR50.72(b)(1)(ii)(B) as a condition that was outside the design basis of the plant.





## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Turkey Point Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 2 5 0 9 0 - 0 1 2 - 0 0 0 3 OF 0 4	LER NUMBER (8)			PAGE (3)		
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**CAUSE OF THE EVENT**

The cause for using a single reset pushbutton for both trains of Containment Spray is an inadequate design. During the construction of Turkey Point Units 3 and 4, Westinghouse took credit for the inherent design of the CS reset pushbutton to provide channel independence. However, a single failure of the CS reset pushbutton was not analyzed for adverse impact on design redundancy requirements.

**ANALYSIS OF THE EVENT**

Manual actuation of the Containment Spray pumps and the associated discharge valves are not affected by failure of the reset pushbutton. Emergency Operating Procedures 3/4-EOP-E-0, "Reactor Trip or Safety Injection," require the operators to verify that containment pressure has been maintained below 20 psig. If containment pressure is above 20 psig and containment spray has not automatically actuated, the operator is required to manually initiate containment spray. The time required for manual containment spray initiation to meet design basis assumptions is dependent on the postulated break size.

A representative Westinghouse OT-2 switch was disassembled and examined by FPL. The internal workings of the switch are essentially sealed from the deleterious effects of dust or the intrusion of foreign matter. Additionally, a search of the INPO Nuclear Plant Reliability Data System (NPRDS) and discussions with Westinghouse indicate no identified failures of the Westinghouse OT-2 switches.

**CORRECTIVE ACTIONS**

1. The Containment Spray reset pushbuttons for Units 3 and 4 were visually inspected. Both reset pushbuttons were verified to be properly reset.
2. The switches for the remaining seven (7) applications on Units 3 and 4 were verified to be correctly wired.
3. Procedure change requests have been generated against General Operating Procedures 3/4-GOP-503, "Cold Shutdown to Hot Standby," Operating Surveillance Procedures 3/4-OSP-0203.1, "Train A Engineered Safeguards Integrated Test," and Operating Surveillance Procedures 3/4-OSP-0203.2, "Train B Engineered Safeguards Integrated Test." Steps will be added to these procedures requiring visual verification that the CS reset pushbutton is properly reset. The procedures are scheduled to be revised by August 15, 1990.
4. FPL Engineering is evaluating the use of a single switch for both trains of a safety-related function in other applications. The evaluation will include the use of the Westinghouse OT-2 switch, as well as switches of a different manufacture. This evaluation is scheduled to be completed by December 3, 1990. A supplement to this Licensee Event Report will be issued if other switch applications are determined to have the potential for adversely impacting plant safety.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Turkey Point Unit 3	05000250	90	012	00	04	OF	04

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5. FPL Engineering is evaluating several design options to address the Containment Spray reset pushbutton application. Modifications for the Containment Spray reset pushbutton will be submitted for inclusion in the Integrated Schedule by September 15, 1990.
6. FPL Engineering will revise the evaluation for the Feedwater bypass reset pushbutton application to clarify that the evaluation is site specific. The revised evaluation is scheduled to be issued by August 15, 1990.
7. Requests for Engineering Assistance (REA) 90-458 and 90-459 have been initiated requesting a modification to the Feedwater bypass reset pushbutton wiring configuration. Train separation provided by using separate contact blocks on the Feedwater bypass reset pushbutton would be consistent with the wiring configuration existing on similar switch applications. A Design Equivalent Engineering Package (DEEP) is scheduled to be issued by September 15, 1990.

**ADDITIONAL INFORMATION**

A similar condition was reported in Licensee Event Report (LER) 50-250/89-018.