

## ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8902280316 DOC.DATE: 89/02/22 NOTARIZED: NO DOCKET #  
 FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250  
 AUTH.NAME: AUTHOR AFFILIATION  
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 CONWAY,W.F. Florida Power & Light Co.  
 RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-003-00:on 890124,automatic isolation of control room  
 ventilation sys during channel check of air intake monitor.  
 W/8 ltr.

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**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   0   3													
TITLE (4) Automatic Isolation of Control Room Ventilation System during Channel Check of Air Intake Radiation Monitor																																	
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	1	2	4	8	9	8	9	—	0	0	3	—	0	0	0	2	2	2	8	9	Turkey Point Unit 4					0	5	0	0	0	2	5	1
OPERATING MODE (9) 5				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																													
POWER LEVEL (10) 0   0   0		20.402(b)				20.406(a)(1)(i)				20.406(c)				X 50.73(a)(2)(iv)				73.71(b)															
		20.406(a)(1)(ii)				50.36(c)(1)								50.73(a)(2)(v)				73.71(c)															
		20.406(a)(1)(iii)				50.36(c)(2)								50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)															
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LICENSEE CONTACT FOR THIS LER (12)		
NAME	TELEPHONE NUMBER	
Edward Lyons, Compliance Engineer	AREA CODE 31015	21416 F 1617 31

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)											
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On January 24, 1989, at 0025, with Unit 3 in Cold Shutdown (mode 5) and Unit 4 defueled, the Control Room Ventilation System (CRVS) shifted to the recirculation mode during conduct of a channel check of the channel B Air Intake Radiation Monitor, RAI 6642. At the time of the event, the redundant channel A (RAI 6643) was out of service, therefore, the CRVS was left in the recirculation mode until 2115 on January 26, 1989, when both channels were declared operable. The actuation occurred when the Reactor Control Operator released the control switch from the check source position. The cause of the actuation is a flaw in the design of the radiation monitor circuit module which can allow the duration of the residual signal to exceed the trip setpoint longer than the duration of the internal blanking circuit. In addition, the duration of the residual signal can vary depending on the accuracy of the calibration performed and the length of time the switch is held in the check source position. The work instruction for calibration of the radiation monitor was revised to ensure that the duration of the residual signal is 6 seconds or less. The work instruction will be further revised in order to provide a more accurate calibration. In addition, the time delay relay between the module and the actuated device was adjusted to 12 seconds.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104  
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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Turkey Point Unit 3	0 5 0 0 0 2 5 0	8 9	— 0 0 3	— 0 0	0 2	OF	0 3

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

## DESCRIPTION

On January 24, 1989, at 0025, with Unit 3 in Cold Shutdown (mode 5), and Unit 4 defueled, the Control Room Ventilation System (CRVS) (EIIS: IV) shifted to the recirculation mode during conduct of a channel check of the Channel B Air Intake Radiation Monitor, RAI 6642 (EIIS: IL) following installation of a plant modification to the system. At the time of the event, the redundant channel A (RAI 6643) was out of service. Therefore, the CRVS was left in the recirculation mode until 2115, on January 26, 1989, when both channel A and B were declared back in service.

The actuation occurred when the Reactor Control Operator (RCO, licensed utility employee) released the control switch for RAI 6642 from the check source position. In the check source position, the detector is exposed to an internal radiation source and sends a signal to the circuit module. While the switch is in the check source position, the actuating relay internal to the module is maintained energized (untripped) by a 15 Vdc source across the coil. The module contains an internal blanking circuit that inhibits the trip function (when the switch is released from the check source position) for approximately 2 seconds while the residual signal voltage decays. The circuit module has a time constant (RC) of 0.033 minutes for the 1 to 10 mR/hr portion of the circuit. Due to this time constant, it takes approximately 6 seconds for the residual voltage in this portion of the circuit to decay to the alarm trip setpoint of 2 mR/hr. This amount of time can vary from approximately 4 to 10 seconds, depending on the accuracy of the calibration and the length of time the switch is held in the check source position. Troubleshooting efforts determined that the duration of the residual signal was approximately 10 seconds when this event occurred.

This event occurred during post installation testing following a modification intended to alleviate this problem. A time delay relay had been installed between the circuit module and the actuated device. However, this relay was set to provide only a 2 second time delay. With the duration of the residual signal greater than approximately 4 seconds, the 2 second blanking circuit in conjunction with the 2 second time delay relay will not prevent an actuation. The 2 second time delay relay setting was based on discussions with the vendor.

## CAUSE OF THE EVENT

The cause of the event is a flaw in the design of the circuit module which can allow the residual signal to exceed the trip setpoint longer than the duration of the internal blanking circuit. This information is not apparent in the vendor manual for the radiation monitor and was determined during troubleshooting efforts by utility Instrument and Control personnel.

The method of calibration contributed to this event in that the accuracy of the calibration can result in variation in the duration of the residual signal.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-01(4)

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Turkey Point Unit 3	05000250	89	003	00	03	OF	03

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

## ANALYSIS

Upon receipt of the spurious signal, the CRVS shifted to the recirculation mode as designed. The redundant channel RAI 6643 was out of service at the time of the event, therefore, the CRVS was left in the recirculation mode. Based on the above, the health and safety of the public was not affected.

## CORRECTIVE ACTION

- 1) Troubleshooting efforts were undertaken to identify the cause of the problem, as discussed above.
- 2) The work instruction for calibration of the radiation monitor was revised to ensure that the duration of the residual signal is 6 seconds or less. This change was made by an On-The-Spot-Change to the work instruction. The work instruction will be further revised in order to provide a more accurate calibration. This action will be completed by March 31, 1989.
- 3) The external time delay relay was adjusted to 12 seconds. This change was made by a Change Request to the Plant Change/Modification package which installed the relay.

## ADDITIONAL INFORMATION

LER 250-88-028 and LER 250 88-020 discuss similar events.

The radiation monitor is manufactured by General Atomics, model number RP-1A.



FEBRUARY 22 1989

L-89-61  
10 CFR 50.73

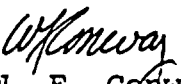
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Gentlemen:

Re: Turkey Point Unit 3 and 4  
Docket Nos. 50-250 and 50-251  
Reportable Event: 250-89-03  
Date of Event: January 24, 1989  
Automatic Isolation of Control Room Ventilation System  
During Channel Check of Air Intake Radiation Monitor

The attached Licensee Event Report (LER) is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

  
W. F. Conway  
Senior Vice President - Nuclear

WFC/RHF/cm

Attachment

cc: Malcolm L. Ernst, Acting Regional Administrator, Region II,  
USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant

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*11*