

JUL @ 8 2013

L-2013-211 10 CFR § 50.73

U. S. Nuclear Regulatory Commission Attn: Document Control Desk Washington, D. C. 20555-0001

Re: Turkey Point Unit 3 Docket No. 50-250 Reportable Event: 2013-007-00 Manual Reactor Trip due to Generator Load Drop

The attached Licensee Event Report 05000250/2013-007-00 is submitted in accordance with 10 CFR 50.73(a)(2)(iv)(A) due to manual actuation of the reactor protection system.

If there are any questions, please call Mr. Robert J. Tomonto at 305-246-7327.

Very truly yours,

Matrung for M. Kiley hael Kiley Michael Kiley

Vice President Turkey Point Nuclear Plant

Attachment

cc: Regional Administrator, USNRC, Region II Senior Resident Inspector, USNRC, Turkey Point Nuclear Plant

IEIRR

Florida Power & Light Company 9760 SW 344th St., Florida City, FL 33035

NRC FORM 366		U.S. NUCLEAR REGULATORY COMMISSION					APPROVED BY OMB: NO. 3150-0104 EXPIRES: 10/31/2013							
(10-2010) Estimated burden per 80 hours. Reported le fed back to indus FOLA/Privacy Secti Washington, DC infocollects.resourse(Regulatory Affairs, N Washington, DC 205 not display a current sponsor, and a persor								l burden per r Reported less to industry vacy Section on, DC ts.resourse@r y Affairs, NEC on, DC 20503 y a currently und a person is	esponse to com ons learned are . Send comm (T-5 F53), 20555-0001, wrc.gov, and to DB-10202, (315). If a means us valid OMB com not required to	ply with this man e incorporated into nents regarding U.S. Nuclear 1 or by the Desk Officer, 0-0104), Office of ed to impose an ir ntrol number, the respond to, the in	datory collect the licensing burden estim Regulatory C internet e Office of Info Management formation coll NRC may not formation coll	tion request: process and hate to the Commission, e-mail to rmation and and Budget, llection does t conduct or lection.		
1. FACIL	ITY NA	ME	Turkey Point Unit 3					2. DOCK	et numb 050002	er 50	3. PAGE	. PAGE 1 of 4		
4. TITLE				Man	ual F	Reactor T	Frip due	to Gei	nerator	Load Dro	op			
5. EV	VENT D	ATE	6. LER NUMBER 7. REPORT D					ATE		8. (OTHER FAC	CILITIES INV	OLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAF	FACILII	TY NAME			DOCKET	NUMBER
5	10	2013	2013	- 007 -	00	7	8	201	3 FACILI	TY NAME			DOCKET	NUMBER
9. OPERA	ATING N	IODE		11. THIS REPO	ORT IS	SUBMITT	ED PURS	UANT T	O THE R	EQUIREME	ENTS OF 10	CFR§: (Check	all that appl	<i>y</i>)
Mode 1			20.2201(b) 20.220 20.2201(d) 20.220 20.2203(a)(1) 20.220 20.2203(a)(2)(i) 50.366				20.2203(a)(2 20.2203(a)(2 20.2203(a)(4 50.36(c)(1)(20.26(c)(1)(3)(i) $50.73(a)(2)(i)(C)$ 3)(ii) $50.73(a)(2)(i)(A)$ 4) $50.73(a)(2)(i)(B)$ (i)(A) $50.73(a)(2)(i)(B)$			2)(i)(C) 2)(ii)(A) 2)(ii)(B) 2)(ii) 2)(iii)	$ \begin{bmatrix} 50.73(a)(2)(vii) \\ 50.73(a)(2)(viii)(A) \\ 50.73(a)(2)(viii)(B) \\ 50.73(a)(2)(viii)(B) \\ 50.73(a)(2)(ix)(A) \\ 50.73(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)(a)($		
approx. 25%			$\begin{array}{ c c c c c c c c c c c c c c c c c c c$				i0.36(c)(1)(i0.36(c)(2) i0.46(a)(3)(i0.73(a)(2)(i0.73(a)(2)(ii)0 i)(A) i)(B)	$ \begin{array}{c c} & 50.73(a)(2)(V)(A) \\ \hline & 50.73(a)(2)(v)(A) \\ \hline & 50.73(a)(2)(v)(B) \\ \hline & 50.73(a)(2)(v)(C) \\ \hline & 50.73(a)(2)(v)(D) \end{array} $			 73.71(a)(2)(x) 73.71(a)(4) 73.71(a)(5) OTHER Specify in Abstract below or in NRC Form 366A 		
					12	. LICENSI	EE CONTA	ACT FO	R THIS I	LER				
NAME Robert J. Tomonto								TELEPHONE NUMBER (Include Area Code) 305-246-7327						
		1	3. COMP	LETE ONE L	INE F	OR EACH	COMPON	NENT F	AILURE	DESCRIBE	D IN THIS	REPORT		
CAU	SE	SYSTEM	COMPO	NENT MAN FACTU	IU- JRER	REPOR TO E	TABLE EPIX	с	AUSE	SYSTEM	COMPONE	NT MANU- FACTURE	REPO TO	RTABLE EPIX
14. SUPPLEMENTAL REPORT EXPECTED									15. E	XPECTED	MONTH	DAY	YEAR	
	YES (If yes, complete 15. EXPECTED SUBMISSION DATE)							NO SUBMISSION DATE						
ABSTRAC	CT (Limi	t to 1400 st	oaces, i.e.,	approximately	15 sin;	gle-spaced i	typewritten	lines)						

On May 10, 2013, Unit 3 reactor was manually tripped in response to a sudden loss of turbine load at approximately 25% reactor power. Plant power was being reduced during a controlled shutdown for planned maintenance. The operating crew observed generator megawatts suddenly reduced to zero, with no operator action. The crew manually tripped the reactor. All systems responded as expected, except for source range nuclear instrument N-3-32 which experienced a loss of detector voltage.

The root cause was determined to be an incorrect deadband pressure value of the Load Drop Anticipatory (LDA) circuit in the turbine control system.

Corrective actions included reducing the dead band of the LDA pressure arming setpoint and adding indicator lights to the turbine control system display to identify armed status.

NRC FORM 366A (10-2010)	U.S. NUCLEAR REGU	U.S. NUCLEAR REGULATORY COMMISSION					
LICENSEE EVENT REPORT (LER) CONTINUATION SHEET							
1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER	3. PAGE				
	05000250	YEAR SEQUENTIAL REVISION NUMBER NUMBER	D 2 - 6 4				
Turkey Point Onit 3	03000230	2013 - 007 - 00	Page 2 01 4				

NARRATIVE

DESCRIPTION OF THE EVENT

On May 10, 2013 at 1109, Unit 3 reactor was manually tripped in response to a sudden loss of turbine load at 25% reactor power. Plant power was being reduced during a controlled shutdown for planned maintenance. At approximately 25% reactor power, the operating crew observed generator megawatts unexpectedly reduce to zero, with no operator action. The crew responded by tripping the reactor. Initial review showed the turbine intercept and control valves closing automatically, prior to the reactor trip.

Initial determination was that the load drop anticipatory (LDA) circuit responded and caused the overspeed protection circuit (OPC) header to drain hydraulic fluid from the control and intercept valves. The LDA is a protective feature that is designed to actuate when megawatt load is less then 20% while low pressure turbine inlet pressure is still greater than 50% load (based on low pressure turbine inlet steam pressure). The circuit is designed to anticipate an overspeed condition due to a sudden loss of generator load. The circuit is designed to disarm at less than 50% load (based on low pressure turbine inlet steam pressure). The LDA system setpoints for 50% load did not disarm the circuit as expected. The turbine control system received the megawatt load (less then 20% signal), and then actuated the LDA logic. The logic closed the intercept valves and control valves for 10 seconds, and then allowed them to reopen. The manual reactor trip resulted in a closure of all turbine valves before the position of the control valves and intercept valves was restored.

The NRC Operations Center was notified by Event Notification 49021 at approximately 1242 on May 10, 2013 in accordance with 10 CFR 50.72(b)(2)(iv)(B).

This event is reportable in accordance with 10 CFR 50.73(a)(2)(iv)(A) as "...any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B) of this section." The Reactor Protection System [JC] was manually actuated during the event and are included in the systems listed in paragraph (a)(2)(iv)(B).

CAUSE OF THE EVENT

Turkey Point Unit 4 implemented an extended power uprate. The turbine digital control system upgrade was one of the extensive changes to the secondary plant to support the extended power uprate. This new turbine control system incorporated the LDA circuit logic.

The root cause was determined to be ineffective implementation of the design change.

The contributing cause was the Human Factor Evaluation did not address the removal (without replacement indication) of the LDA armed lights.

NRC FORM 366A (10-2010)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET NUMBER	6. LER NUMBER			3. PAGE
Tradicas Daline I Inite 2	05000250	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	D
Turkey Point Unit 3		2013	- 007 -	00	Page 3 01 4

NARRATIVE

BACKGROUND INFORMATION

ANALYSIS OF EVENT

Turkey Point Unit 4 implemented an extended power uprate. The turbine digital control system upgrade was one of the extensive changes to the secondary plant to support the extended power uprate (EPU). This system interfaced with the electro-hydraulic control (EHC) system.

During post modification testing (PMT) it was discovered that the LDA function quickly closed the control and intercept valves, but also dropped EHC header pressure which slowly closed other turbine steam valves that eventually would lead to a turbine trip. In response to this condition, engineering generated a change request notice (CRN) to correct this issue by revising the LDA pressure disarm logic to only monitor low pressure turbine inlet pressure.

To reset the LDA pressure armed value a dead band was established. The LDA system arming value was set to a pressure value of 100 psig, which was the predicted value of the low pressure turbine inlet pressure at 50% power. The dead band for LDA pressure had been incorrectly set to 50 psi. Subsequent adjustment during power ascension testing reduced the arming pressure value to 87.25 psig and this resulted in lowering the LDA disarmed value to 37.25 psig. Based on the available indication and the current procedural guidance, the Operations crew performed as expected.

This event could have been prevented, if the LDA armed status lights had been maintained, the control room operators could have correctly verified the status of the LDA system and stopped the downpower and corrected the condition. Additionally, if the dead band had been appropriate, an overlap arming of the two LDA parameters would not have occurred.

ANALYSIS OF SAFETY SIGNIFICANCE

During a planned shutdown, the operating crew manually tripped the reactor. All systems operated as expected during the reactor shutdown, with the exception of N-3-32 source range detector which experienced a loss of detector voltage. There was no impact on the health and safety of the public. As a result, the safety significance of this event is very low.

CORRECTIVE ACTIONS

Corrective actions are documented in AR 1873643 and include the following:

- 1. Reducing the dead band of the LDA pressure arming setpoint.
- 2. Adding indicator lights to the Turbine Control System display to identify armed status.

NRC FORM 366A (10-2010)	· · · · ·		U.S. NUCL	EAR REGUL	ATORY COMMISSION			
LICENSEE EVENT REPORT (LER) CONTINUATION SHEET								
1. FACILITY NAME	2. DOCKET NUMBER	<u> </u>	5. LER NUMBE	R	3. PAGE			
Turkey Point Unit 3	05000250	year 2013	SEQUENTIAL NUMBER	REVISION NUMBER	Page 4 of 4			
NARRATIVE		<u>L</u>		I	· · · · · · · · · · · · · · · · · · ·			
FAILED COMPONENTS IDENTIFIED: Nor	ne							
PREVIOUS SIMILAR EVENTS: None								