

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 2
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TITLE (4)
Engineered Safety Feature Actuation - Turbine Runback

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)												
1	0	7	8	5	8	5	0	3	1	0	0	1	1	0	6	8	5	N/A	0	5	0	0	0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 8: (Check one or more of the following) (11)											
POWER LEVEL (10) 1 0 0	20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)		
	20.405(a)(1)(ii)			50.38(c)(1)			50.73(a)(2)(v)			73.71(c)		
	20.405(a)(1)(iii)			50.38(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 366A)		
	20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)					
	20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)					
	20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)					

LICENSEE CONTACT FOR THIS LER (12)										
NAME Randall D. Hart, Licensing Engineer										
TELEPHONE NUMBER AREA CODE 3 0 5 2 4 5 - 1 2 9 1 1 0										

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS
X	E F	F U	W 1 2 3	Y		X	E F	R L Y	W 1 2 3	Y
X	E F	F U	W 1 2 3	Y		X	E F	E C B D	W 1 2 3	Y

SUPPLEMENTAL REPORT EXPECTED (14)											EXPECTED SUBMISSION DATE (15)			MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)											NO					

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

Event:

On October 7, 1985, at 0349, while Unit 3 was at 100% power, a turbine runback to approximately 540 MW_e occurred. Operations personnel were investigating a ground on the 3A DC bus using off-normal operating procedure (ONOP) 9608.1, "125 V DC System - Location of Grounds", when they cycled breaker 49 on bus 3D01 which supplies the Unit 3 rod position indication (RPI) inverter. When breaker 49 was cycled, the RPI rod bottom alarm came in, initiating a turbine runback to approximately 540 MW_e. The unit was stabilized by placing the steam dump to condenser valves in manual to stop load swings due to valve modulations. Turbine power and reactor power were matched to facilitate unit stabilization.

Cause of Event:

The cause of the turbine runback was due to a failure of the RPI inverter. The RPI inverter failed due to a positive DC spike coming from the 3AR2 relay coil. The 3AR2 relay coil monitors the DC input supply to the inverter. This spike caused a current surge in the inverter which blew fuses 1FU and 2FU and resulted in the inverter failure.

Corrective Action:

- 1) The RPIs were placed on their alternate power supply and the unit was returned to full power.
- 2) Replaced fuses 1FU and 2FU, relay coil 3AR2 and the logic printed circuit card on the RPI inverter. The inverter was then placed back in service.
- 3) A procedure change has been made to ONOP 9608.1 to caution personnel not to cycle the RPI inverter power supply breaker on either unit because a turbine runback may occur.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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 5	— 0 3 1	— 0 0 0	2	OF	0 2

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

Event:

On October 7, 1985, at 0349, while Unit 3 was at 100% power, a turbine runback to approximately 540 MW_e occurred. At 0205, an alarm came in for a ground on the 3A DC bus. An investigation into the cause of the alarm was begun using off-normal operating procedure (ONOP) 9608.1, "125 V DC System - Location of Grounds". Breaker number 49 on bus 3D01, Unit 3 - Rod Position Indication (RPI) Inverter, was cycled with no problems. The investigation did not discover the source of the ground. At 0345, the alarm locked in so another investigation into the source of the ground was started using ONOP 9608.1. This time when breaker 49 was cycled, the RPI rod bottom alarm came in, initiating a turbine runback to approximately 540 MW_e. At 0355, the steam dump to condenser valves were placed in manual control to stop load swings due to valve modulations and to help stabilize the unit at approximately 540 MW_e. At 0400, turbine power and reactor power were matched to help facilitate unit stabilization.

Cause of Event:

The cause of the turbine runback was due to a failure of the RPI inverter. The inverter failed due to a positive DC spike coming from the 3AR2 relay coil. The 3AR2 relay coil monitors the DC input supply to the inverter. This spike caused a current surge in the inverter which blew fuses 1FU and 2FU and resulted in the inverter failure.

Analysis of Event:

Upon receipt of the RPI runback signal, the turbine runback protection system initiated a turbine runback to approximately 540 MW_e as designed. The control rods were in automatic control at that time and inserted to maintain reactor power with turbine load. Reactor coolant system and secondary system parameters responded as expected for this type of event. Based on the above, the health and safety of the public were not affected.

Corrective Action:

- 1) The RPIs were placed on their alternate power supply and the unit returned to full power by 0730.
- 2) Replaced fuses 1FU and 2FU, relay coil 3AR2 and the logic printed circuit card on the RPI inverter. Additional tests were performed on the inverter to troubleshoot the timeliness on the RPI inverter normal/emergency AC transfer. The test results showed a time delay of approximately 2 seconds between the loss of normal AC and transfer to emergency power. An evaluation will be done to assess whether this time delay needs to be modified.
- 3) In the interim, until the above evaluation is complete, an on-the-spot change (OTSC) was made to ONOP 9608.1 on October 9, 1985, to change the caution/comment section for the breakers for the RPI inverters on both units to read "Do not open, runback may occur". This OTSC has since been incorporated as a permanent change to the procedure on October 16, 1985.

Additional Details:

The RPI inverter is a Westinghouse 5 KVA inverter. These fuses are Westinghouse style number 2049A69403. The relay is a BFD22 type, Westinghouse style number 69E4024. The logic printed circuit card is Westinghouse style number 3443D72GO.

Similar Occurrences: None.



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L-85-427

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

Gentlemen:

Re: Reportable Event 85-31
Turkey Point Unit 3
Date of Event: October 7, 1985
Engineered Safety Feature
Actuation - Turbine Runback

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

Very truly yours,

J. W. Williams, Jr.
for J. W. Williams, Jr.
Group Vice president
Nuclear Energy

JWW/PLP:mls

Attachment

cc: Dr. J. Nelson Grace, Region II, USNRC
Harold F. Reis, Esquire
PNS-LI-85-381/2

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