

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

Oconee Nuclear Station, Unit 3

DOCKET NUMBER (2)

0 5 0 0 0 2 8 7

PAGE (3)

1 OF 0 3

TITLE (4)

Reactor Trip on High RCS Pressure Due to Reactor Coolant Flow Transmitter Failure

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	2	1	6	8	4	8	4	0	0	2	0	0	0	0	0	0	0	0	0	0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																				
OPERATING MODE (9)		N		20.402(b)		20.406(e)		X		50.73(a)(2)(iv)		73.71(b)								
POWER LEVEL (10)		1 0 0		20.406(a)(1)(i)		50.36(a)(1)				50.73(a)(2)(v)		73.71(c)								
				20.406(a)(1)(ii)		50.36(a)(2)				50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)								
				20.406(a)(1)(iii)		50.73(a)(2)(i)				50.73(a)(2)(viii)(A)										
				20.406(a)(1)(iv)		50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)										
				20.406(a)(1)(v)		50.73(a)(2)(iii)				50.73(a)(2)(ix)										

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Jocelyn C. Petty	AREA CODE 7 0 4 3 7 3 - 8 2 7 0

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDs
X	J	C	X	T	B	0	4	5	Y

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X					

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

On February 16, 1984, a Unit 3 reactor trip was initiated by the reactor protection system when the high Reactor Coolant System (RCS) pressure setpoint was reached. A flow transmitter falsely indicated no flow through the "A" steam generator, causing a feedwater reratio, increasing the RCS pressure to 2290 PSIG. Unit 3 was at 100% power at the time of the trip.

This event is attributed to the failure of the RC Loop "A" flow transmitter due to a malfunctioning amplifier assembly. The reactor tripped as designed and no anomalies arising from the event occurred. The Integrated Control System RC flow indication source was switched to another channel of the Reactor Protection System. A new amplifier assembly was installed and the indication source was switched back to the normal channel line-up. The unit reached 100% FP 34 hours after the trip.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Oconee Nuclear Station, Unit 3	0 5 0 0 0 2 8 7 8 4	—	0 0 2	—	0 0	0 2	OF 0 3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Description of Occurrence:

On February 16, 1984 Unit 3 was operating at a steady 100% full power. At 0315 hours the Reactor Coolant (RC) Loop "A" flow transmitter (3FT-14P) failed. After failing, the transmitter output indicated that there was no flow through the "A" steam generator. The Integrated Control System (ICS), which utilizes the transmitter output in controlling the unit, immediately began a feedwater reratio and reactor power runback. This reratio began reducing the amount of feedwater flow to the "A" steam generator while increasing the flow to the "B" steam generator. The actual RC flow in Loop "A", however, had not decreased. Feedwater flow to the "A" steam generator decreased faster than feedwater flow to the "B" steam generator increased and the amount of heat transferred from the Reactor Coolant System (RCS) decreased. This decrease in heat transfer caused the RCS pressure to increase until the RPS setpoint of 2290 psig was reached. At that point RPS Channels "A" & "B" actuated and tripped the unit. The amount of time which elapsed between the transmitter failure and the unit trip was approximately 60 seconds.

Cause of Occurrence:

The cause of the transmitter failure was determined to be a malfunctioning amplifier assembly. The transmitter [EIIS:XT] was manufactured by the Bailey Meter Company and is a Process Computer Transmitter, Type BY, Series 10. The failed component is an Amplifier Assembly, part no. 6619921-1.

The transmitter is calibrated each refueling outage and was last calibrated May 20, 1982. Review of past incidents indicated no previous occurrences of this type.

Analysis of Occurrence:

The reactor tripped as designed, followed immediately by the turbine trip. The unit was stabilized in a safe condition and post trip plant response was as expected. Reactivity was properly controlled by the reactor trip. Reactor coolant system pressure decreased to ~1820 psig and then recovered to its normal post-trip value (2130 psig). The pressurizer power operated relief valve and safety valves were not challenged. All ICS stations were in automatic and responded appropriately. The reactor coolant system average temperature decreased to its normal post-trip value (~555°F). Pressurizer level declined to 80 inches before recovering. The maximum cooldown rate allowed by Oconee Technical Specifications (50°F/.5 hour) was not approached.

Steam pressure peaked at 1030 psig and initially stabilized at ~990 psig. The Main Steam Relief valves responded properly. Steam generator level controlled properly at its 25 inch startup level setpoint. Main feedwater was used to maintain steam generator level. Emergency feedwater was not demanded. All safety systems responded appropriately to the trip.

After the plant was initially stabilized, steam pressure decreased from its nominal post-trip value, to about 850 psig. This decrease was caused by lifting of relief valves in the auxiliary steam header (being supplied by Unit 3), and by a temporary lowering of the bypass valve setpoint. The auxiliary steam header was shifted to Unit 2 about ten minutes after the trip, and steam pressure stabilized at ~930 psig.

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TEXT (If more space is required, use additional NRC Form 365A's) (17)

Analysis of Occurrence (cont'd):

However, the RCS pressure, temperature, and pressurizer level responses remained within acceptable ranges and posed no significant control problems.

There were no releases of radioactivity, no Engineered Safeguards actuations, and no RCS leakage. The health and safety of the public were not affected.

Corrective Action:

After the unit was stabilized at hot shutdown the failed component was identified. The source of RC flow indication to the ICS was then swapped from RPS Channel "E" (the normal source) to RPS Channel "A" (the alternate source). The failed transmitter was repaired. A new amplifier assembly was installed. The repaired transmitter was calibrated and the ICS RC flow indication source was swapped back to Channel "E". The unit was restarted and reached 100% full power at 1425 hours on February 17, 1984.

**DUKE POWER COMPANY**

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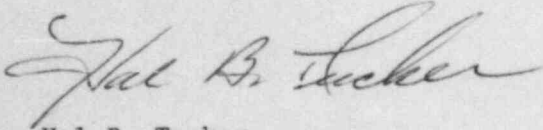
March 19, 1984

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

Subject: Oconee Nuclear Station, Unit 3  
Docket No. 50-287  
LER 287/84-02

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 287/84-02 concerning a Unit 3 high Reactor Coolant System pressure reactor trip which is submitted in accordance with §50.73(a)(2)(iv). Initial notification of this event was made (pursuant to §50.72 Section (b)(2)(ii)) with the NRC Operations Center via the ENS on February 16, 1984. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal B. Tucker

JCP/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator  
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Oconee Nuclear Station

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