

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) Anticipatory Reactor Trip																
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	0 7	8 4	8 4	0 0 4	0 0	0 7	0 9	8 4					0 5 0 0 0			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
POWER LEVEL (10) 0 12 0		20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)		
		20.405(a)(1)(i)				50.36(c)(1)				<input type="checkbox"/> 50.73(a)(2)(v)				73.71(c)		
		20.405(a)(1)(ii)				50.36(c)(2)				<input type="checkbox"/> 50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 365A)		
		20.405(a)(1)(iii)				50.73(a)(2)(i)				<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
		20.405(a)(1)(v)				50.73(a)(2)(iii)				<input type="checkbox"/> 50.73(a)(2)(ix)						
LICENSEE CONTACT FOR THIS LER (12)																
NAME M. A. Haghi										TELEPHONE NUMBER 7 0 4 3 7 3 - 7 0 9 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						
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO				

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

On June 7, 1984 at 2233 hours, Unit 3 experienced an apparent Reactor Protective System (RPS) Turbine Generator/Reactor (TG/Rx) anticipatory trip from approximately 20% Full Power (FP). The trip ostensibly originated in the RPS when the TG/Rx contact buffers tripped with at least 2 RPS channel bistables associated with the TG/Rx anticipatory trip circuitry not bypassed. There is no evidence that an actual turbine trip occurred to initiate the event. The unit was stabilized at hot shutdown conditions.

Investigation into the cause of the trip and testing of the RPS circuit after the trip, failed to find any malfunctioning equipment or any other reason for the trip. The plant response following the trip was as expected. There were no releases of radioactivity and the health and safety of the public were not affected. The Unit was restarted and reached 100% full power at 1240 hours on June 9, 1984.

8407260045 840709
PDR ADOCK 05000287
S PDRIE22
1/1

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/21/85

FACILITY NAME (1) Oconee Nuclear Station, Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 7 8 4 - 0 0 4 - 0 0	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 4	0 0 4	0 0	0 2	OF	0 3

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

Description of Occurrence:

On June 7, 1984, Oconee 3 was in the process of escalating power after a unit trip at 1321 hours (see the July 9, 1984 Licensee Event Report 287/84-03). As a part of the normal turbine generator start-up procedure, the turbine was reset at 1744 hours after the reactor had gone critical at 1710. The TG/Rx trip contact buffers for all 4 RPS channels were reset at 1752 hours. The generator was placed on line at 2133 hours. At 2233 hours the reactor tripped from approximately 20% power when an RPS anticipatory TG/Rx trip occurred. The trip apparently resulted when contact buffers opened which fed two "armed" RPS TG/Rx bistables. The main turbine did not actually trip until after the reactor trip.

Cause of Occurrence:

As each indicated Nuclear Instrumentation (NI) power level increases above 20% FP, the associated channel of TG/Rx anticipatory trip circuitry changes from the bypassed to the armed condition. The TG/Rx anticipatory trip is initiated when two out of four armed RPS bistables sense their respective TG/Rx trip contact buffers open indicating that the turbine has tripped. The contact buffers are opened by low Electro-Hydraulic Control (EHC) pressure and can also be opened manually. These switches can only be reset manually; arming of the bistables is automatic.

The indications of what initiated the reactor trip are not congruous. The Events Recorder showed only a TG/Rx trip for RPS Channel "B" before the Control Rod Drive (CRD) breakers opened and a Channel "A" TG/Rx trip afterwards; there were no indications for Channels "C" and "D" tripping. The Alarm Typer showed Channel "B" TG/Rx tripped along with the CRD breakers (the Alarm Typer does not necessarily print out in chronological order within its one second scan interval.) No Alarm Typer indications were given for Channels "A", "C", and "D" tripping. The Alarm Typer also showed Channels "A" and "B" "not bypassed" (i.e., bistables armed) ~ 1½ minutes before the trip; one second after the trip, Channels "A" and "B" bypassed (unarmed) was indicated. According to oral accounts, the tripped lights were lit for Channels "A", "B", and "C" in their respective RPS Cabinets. Also the statalarms indicating these RPS channels tripped were lit.

The RPS was thoroughly checked out before unit restart. This included tripping each RPS Channel and verifying correct response - including indications on statalarms, Events Recorder, Alarm Typer and cabinet lights. No problems were found. An independent review of the trip was conducted prior to restart. The cause of the event is unknown.

Analysis of Occurrence:

Reactor power prior to the trip was approximately 19%; although small differences in indicated power between NI channels would be expected. The unit was operating with all four reactor coolant pumps, one main feedwater pump and one makeup pump running. The turbine and reactor were in manual and feedwater in automatic control.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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			
Oconee Nuclear Station, Unit 3	0 5 0 0 0 2 8 7	8 4	- 0 0 4	- 0 0 0 3	OF	0	3

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

Following the reactor trip the plant was stabilized in a hot shutdown condition. The post trip plant response was normal. The minimum primary pressure and average temperature were approximately 1980 psig and 550°F, respectively. The primary stabilized at a temperature of 555°F and pressure of 2100 psig. The pressurizer level reached a minimum of 140 inches. The maximum steam generator pressure was about 1040 psig. Steam pressure was controlled near its post trip target of about 1010 psig. The main feedwater flow reduction was smooth, controlling steam generator level at 25 inches.

The Power Operated Relief Valve and Pressurizer Code Reliefs did not actuate. The Integrated Control System (ICS) responded appropriately following the reactor trip and there were no Engineered Safeguard actuations. The Reactor Coolant System (RCS) cooldown did not exceed the Technical Specification limit of 50°F/half-hour.

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

Corrective Action:

After the trip the unit was stabilized in a hot shutdown condition. Investigation into the cause of the trip did not find any malfunctioning equipment or any other reason for the trip. The unit was restarted and reached 100% full power at 1240 hours on June 9, 1984.

DUKE POWER COMPANY

P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

July 9, 1984

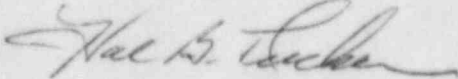
TELEPHONE
(704) 372-4531

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

Subject: Oconee Nuclear Station, Unit 3
Docket No. 50-287
LER 287/84-04

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 287/84-04 concerning a Unit 3 anticipatory Turbine Generator/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 June 8, 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

MAH/rhs

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

Ms. Helen Nicolaras
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange, Suite 245
270 Farmington Avenue
Farmington, CT 06032

M & M Nuclear Consultants
1221 Avenue of the Americas
New York, New York 10020

IE22
11

July 9, 1984

Page 2

bcc: P. M. Abraham
P. H. Barton
R. T. Bond
R. J. Brackett
K. S. Canady
J. W. Cox
R. C. Futrell
E. M. Geddie
P. F. Guill
S. B. Hager
W. A. Haller
G. W. Hallman
W. O. Henry
S. A. Holland
C. C. Jennings
J. C. Petty

H. R. Lowery
T. C. Matthews
M. D. McIntosh
T. E. Mooney
R. G. Margon
J. C. Petty
M. E. Pacetti
B. M. Rice
R. P. Rogers
N. A. Rutherford
A. L. Snow
R. V. Straub (B&W)
E. L. Thomas
G. E. Vaugh.
W. Washington
Group File: OS-801.02
Group File: OS-815.04