

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)

DOCKET NUMBER (2)

PAGE (3)

Oconee Nuclear Station, Unit 3

0 5 0 0 0 2 8 7 1 OF 0 3

TITLE (4)

Reactor Trip Preceded by Unit 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)
06	07	84	84	003	00	07	09	84		0 5 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)		20.402(b)		20.405(a)		X 50.73(a)(2)(iv)		73.71(b)		
POWER LEVEL (10)		0120		20.405(a)(1)(i)		50.73(a)(2)(v)		73.71(e)		
		20.405(a)(1)(ii)		50.73(a)(2)(vi)		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)(ix)				

LICENSEE CONTACT FOR THIS LER (12)

NAME

TELEPHONE NUMBER

M. A. Haghi

AREA CODE

7 0 4 3 7 3 - 7 0 9 9

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

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

On June 7, 1984 at 1321 hours a Unit 3 trip was initiated by the reactor Protection System (RPS) on an erroneous, indicated loss of both Feedwater Pumps. The trip occurred at approximately 20% power following a successful unit runback from 100% full power. The runback was caused by an erroneous, indicated loss of generator stator coolant. The trip occurred when the "3A" Feedwater Pump (FWP) was manually tripped as called for by procedure. Indication of loss of both FWPs caused the RPS to trip the reactor. The "3B" FWP was operating despite the indication of being tripped. The cause of the reactor trip is not known since neither a component failure/malfunction nor other apparent cause could be found to explain why indications inaccurately reflected that the "3B" FWP had tripped.

The Unit was immediately stabilized at hot shutdown and an improper thermostat setpoint which caused the unit runback was properly set. The plant response was as expected. There were no releases of radioactivity and the health and safety of the public were not affected. The Unit was restarted but subsequently tripped during power escalation. See LER #287/84-04 dated July 9, 1984.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Oconee Nuclear Station, Unit 3	DOCKET NUMBER (2) 05000287	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		84	003	00	02	OF	03

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

Description of Occurrence:

On June 6, 1984 at 1801 hours a runback from 100% reactor power began on Unit 3. The runback was caused by an erroneous indicated loss of Generator Stator Cooling (SC). Reactor power was automatically runback to approximately 12% full power. After ensuring that the appropriate systems operating parameters were normal, the unit began increasing power at approximately 1927 hours and the unit reached 100% reactor power at 0624 hours on June 7, 1984.

At 1316 hours on June 7, 1984, a second turbine runback was initiated again due to an erroneous indicated loss of SC. The indications and alarms received during this runback were essentially the same as those received during the first runback. Reactor power was automatically runback from 100% power to approximately 20% full power. At 1321 hours, the "3A" Feedwater Pump (FWP) was manually tripped as called for by procedure for operation at that power level. Immediately Feedwater Pump/Reactor bistables in RPS Channels "A", "B", and "D" tripped causing an anticipatory reactor trip on loss of both FWP. The "3B" FWP did not actually trip and was operating during the transient.

Cause of Occurrence:

The cause of both runbacks is believed to have been an improper (low) setpoint on a thermostat (63-T72) which is used to initiate an automatic runback if the stator water temperature reaches its setpoint (176°F). The setpoint on thermostat 63-T72 was found to be about 30 degrees below its expected value of 176°F. Available data showed that the stator outlet temperature was 146°F (just above the normal operating temperature of ~ 145°F) one minute before the first runback at 1801 hours on June 6. Actual stator cooling and all indications of SC flows and temperatures were normal.

The initiating event for the reactor trip was the manual trip of "A" FWP. When "A" pump was tripped, RPS channels A, B, and D tripped due to the anticipatory reactor trip on loss of both "3A" and "3B" FWP.

The cause of the reactor trip is not known at this time since neither a component failure/malfunction nor other apparent cause could be verified as to why there was a false indication of the "3B" FWP tripping.

The RPS contact buffers will open (indicating that a FWP is tripped) if pump discharge pressure reaches 750 psig or pump hydraulic oil pressure reaches 75 psig. Based on investigations to date, one theory is that a momentary dip in hydraulic oil pressure to less than 75 psig caused the RPS contact buffers for FWP "B" to open. Approximately 2½ minutes later, when the "A" FWP was manually tripped, the RPS may have "thought" that both FWPs were tripped and initiated the anticipatory reactor trip. This theory has not been confirmed.

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TEXT (If more space is required, use additional NRC Form 365A's) (12)

Analysis of Occurrence:

Prior to the trip, the reactor power was at 20% full power with four reactor coolant pumps, two main feedwater pumps and one make-up pump running. The Integrated Control System (ICS) was in a fully automatic mode.

Following the reactor trip, the plant response was normal. Neither an overcooling nor overheating of the primary system was experienced. The minimum T_{VE} was 555°F, the minimum reactor coolant pressure was 2,000 psig and the minimum pressurizer level was approximately 160 inches, which is as expected.

The steam generator outlet pressure was controlled near its post trip target of ~ 1010 psig. Before the trip, the steam generator outlet pressure reached ~ 1070 psig which was the maximum during this transient. The main feedwater flow was reduced smoothly and the SG level was controlled at its setpoint ~ 24 inches in both steam generators.

The Power Operated Relief Valve and Pressurizer Code Reliefs did not actuate. The ICS responded appropriately following the reactor trip. There was no Engineered Safeguards actuation and no release of radioactivity to the environment. The Reactor Coolant System cooldown did not exceed the Technical Specification limit of 50°F/half-hour. At least one FWP was operating at all times. The Emergency Feedwater System was available to remove decay heat if both FWPs had actually been lost as indicated. Therefore, the health and safety of the public was not affected by this incident.

Corrective Action:

The unit was stabilized at hot shutdown. The immediate corrective actions verified that the runbacks were not initiated because of an actual loss of SC. The setpoint for thermostat 63-T72 was correctly set to 176°F. Other actions set up the Stator Coolant System so that both computer and annunciator alarms should actuate before a runback condition on high temperature is reached. The unit was restarted and reached 100% full power at 1240 hours on June 9, 1984.

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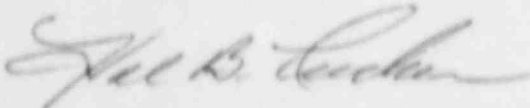
July 9, 1984

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

Subject: Oconee Nuclear Station, Unit 3
Docket No. 50-287
LER 287/84-03

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 287/84-03 concerning a Unit 3 anticipatory loss of both feedwater pumps 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 7, 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/php

Attachment

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