

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Oconee Nuclear Station, Unit 2 DOCKET NUMBER (2) 0 5 0 0 0 2 7 0 PAGE (3) 1 OF 0 3

TITLE (4) Reactor Trip Due to High Reactor Coolant System Pressure

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	4	2	6	8	5	8	5	0	0	5	0	5	0	0	0	0	0
0	4	2	6	8	5	8	5	0	0	5	0	5	0	0	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 7 5	20.402(b)	20.406(c)	X	50.73(a)(2)(iv)	73.71(b)					
		20.406(a)(1)(i)	50.36(c)(1)		50.73(a)(2)(v)	73.71(c)					
		20.406(a)(1)(ii)	50.36(c)(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 Sandra G. Godwin, Licensing TELEPHONE NUMBER 7 0 4 3 7 3 - 2 3 6 2

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 J C O N	A 3 8 0	N						

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

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

On April 26, 1985, at 1107 hours, Unit 2 tripped from 75% full power (FP) on high Reactor Coolant System (RCS) pressure. While troubleshooting a problem in the Electro Hydraulic Controls (EHC) cabinet, an inadvertent closure of the Low Pressure Turbine Intercept Valves (IVs) and the Main Steam Turbine Control Valves (CVs) was initiated by an apparent spurious signal that originated from within the EHC cabinet. This caused an increase in the RCS pressure, and it resulted in a high RCS pressure reactor trip approximately seven seconds later.

The immediate corrective action was to stabilize the unit at hot shutdown conditions, which was obtained at approximately 1120 hours. The apparent cause of the intercept valves going closed was a component failure malfunction in the EHC System. The IVs and CVs closed simultaneously when a technician manipulated an EHC card; this should not have affected the position of the valves.

The unit was back on line at 1729 hours. There were no abnormal releases of radioactivity and the health and safety of the public were not affected.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Description of Occurrence:

On April 24, 1985, Operations personnel were performing the weekly "Secondary System Protection Test" on Oconee Unit 2. At 0010, on April 25, 1985 the Main Turbine Backup Overspeed Trip test light did not light as required during this test. A work request was written to repair this problem.

On April 26, 1985, while the unit was operating at 75% FP, work on the problem was begun. The susceptibility of the EHC equipment to malfunction with external physical disturbances in and about the EHC cabinet was discussed. Past malfunctions have occurred that have contributed to unit trips. (See LER 269/85-02 and 269/85-05.) Although precautions were taken while troubleshooting, a spurious signal originated within the EHC System that caused the IVs and the CVs to close. An immediate increase in the RCS pressure resulted, which caused the reactor to trip on high RCS pressure, approximately seven seconds later. The unit was stabilized at hot shutdown after the trip. The EHC System was checked and found to be operational. The unit was restarted and went critical at 1352 hours. The turbine/generator was brought on-line at 1729.

The technician who was troubleshooting the test light problem at the time of the unit trip was verifying that a relay card was securely in place in the EHC cabinet. He did so by pushing in on the card, but found the card to be tightly in place. An analysis of the circuit on this card led to no conclusive reason why the IVs and CVs closed. The relays on the card are normally deenergized while the CVs and IVs are opened and they would have to be energized to close the valves. Moving the card slightly would increase the probability that the relays would stay deenergized instead of energizing. A reason for the spurious signal that closed the IVs and CVs could not be determined.

Since the initial calibration of the EHC System during the initial startups of all three units, a calibration had not been performed on the EHC System until two years ago when Unit 2 was calibrated, followed by Unit 3, and then Unit 1. The recalibration was done differently from the original calibration done by the EHC System manufacturer. The tolerances are now explicit and have resulted in making the EHC System more sensitive. The probability of a voltage spike causing a critical error signal has increased.

Cause of Occurrence:

No conclusive reasons were determined for the IVs and CVs closing. However, since the unit tripped at the same instant the EHC card was being manipulated, the event is classified as a component malfunction. The relay card being manipulated at the time of the reactor trip should have had no consequences.

Contributing causes to this event are as follows:

1. The recent calibration of the EHC System to a more sensitive condition.
2. The relative "System Corrective Action" inexperience of the technician involved in the troubleshooting of the EHC.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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

Recently there have been two other reactor trips originating in the EHC. It is concluded that these events are indicative of recurring events originating in the EHC cabinets.

Analysis of Occurrence:

The unit was stabilized at hot shutdown conditions after the reactor trip. All ICS control stations were in auto before the trip and they responded appropriately during the trip transient. There were no Engineering Safeguard actuations. There was no Emergency Feedwater actuation. The Pressurizer relief valves were not challenged. The Technical Specification maximum cooldown rate of 100°F per hour was not approached. Main steam pressure had to be dropped to approximately 990 psi to reseal a Main Steam Relief Valve (MSRV #8). The Pressurizer level reached a minimum of approximately 50 inches and stabilized at approximately 160 inches. The RCS pressure reached a minimum of approximately 1750 psi before being brought back up and stabilized at approximately 2100 psi. The Steam Generator levels stabilized at 25 inches. No Technical Specifications limits were exceeded, and the health and safety of the public were not affected.

Corrective Action:

The immediate corrective action ensured that the unit was stabilized at hot shutdown conditions. The supplemental corrective action checked out the EHC System for possible causes for the CVs and IVs to close. It was found to have no problem.

Planned corrective action includes a program to be implemented in the near future which will label all cabinets with trip potential with signs. These signs will require the Operation Supervisor's permission before any work is performed in the cabinet. Also, Maintenance will continue to make advancement in its employee system qualification through the implementation of the Employee Training and Qualification System.

DUKE POWER COMPANY

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HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

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May 28, 1985

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

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
LER 270/85-05

Gentlemen:

Pursuant to 10 CFR 50.73 Sections (a) (1) and (d), attached is Licensee Event Report 270/85-05 concerning a Unit 2 reactor trip due to high Reactor Coolant System pressure. This report is submitted in accordance with §50.73(a)(2)(iv). This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

H.B. Tucker
Hal B. Tucker

SGG:smh

Attachment

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Document Control Desk
May 28, 1985
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