

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Oconee Nuclear Station, Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 2 6 9 1	PAGE (3) 1 OF 03
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TITLE (4)  
Reactor Trip on High RCS Pressure Following Feedwater BTU Limit 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)														
0	5	1	2	8	4	8	4	0	0	2	0	0	0	6	1	1	8	4			0	5	0	0	0

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)									
POWER LEVEL (10) 1 0 0	20.402(b)	20.405(e)	<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(e)					
	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 366A)					
	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)		TELEPHONE NUMBER	
NAME Mohammad 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	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
X	J	A	R	L	Y	P	2	9	7	Y

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 May 12, 1984, at approximately 0203 hours, a Unit 1 reactor trip was initiated by the Reactor Protection System when the high Reactor Coolant System (RCS) pressure setpoint was reached. The reactor was operating at 100% full power at the time of the trip. This event is attributed to the failure of the key selector switch and relay for the RC outlet temperature ( $T_{HOT}$ ), which caused a feedwater runback due to BTU limits and low  $T_{HOT}$  indication, increasing the RCS pressure to the trip setpoint. Dirty relay contacts are the apparent cause of the failure of the key selector switch and relay for  $T_{HOT}$ .

The unit was immediately stabilized at hot shutdown and the failed component was identified. The relay for  $T_{HOT}$  indication and associated key switch were replaced by 0500 hours on May 12, 1984. 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 and reached 100% FP about 34 hours after the trip.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Oconee Nuclear Station, Unit 1	DOCKET NUMBER (2)  0   5   0   0   0   2   6   9	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8   4	-   0   0   2	-   0   0	0   2	OF	0   3

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

Description of Occurrence:

On May 12, 1984, Unit 1 was operating at 100% full power. At approximately 0203 hours, while checking the pressurizer level in accordance with procedure, the pressurizer level switch was pushed. When the switch was pushed, the relay for the reactor T<sub>HOT</sub> indication immediately dropped out, causing a low T<sub>HOT</sub> indication. The relay for pressurizer level was located in the same Integrated Control System (ICS) cabinet as the T<sub>HOT</sub> relay and its actuation apparently caused the T<sub>HOT</sub> relay to drop out.

The ICS began a feedwater runback on the low T<sub>HOT</sub> indication because of BTU limits. BTU limits were designed to prevent a final steam temperature reduction if a unit tried to remove more energy from the steam generator than was available. Feedwater flow demand was limited by T<sub>HOT</sub> because the BTU limit was in effect. The ICS was swapped to manual to try to balance feedwater flow to reactor power output. The decreased feedwater flow resulted in decreased heat transfer from the RCS and caused RCS pressure to increase. The unit tripped on high RCS pressure. The amount of time which elapsed between the relay failure and the unit trip was approximately 14 seconds.

Cause of Occurrence:

The cause of the T<sub>HOT</sub> relay (183-TH-AB1) failure was determined to be dirty contacts which, thus, would not close. The related key switch showed no indication of being faulty. The faulty T<sub>HOT</sub> relay resulted in feeding a Low T<sub>HOTA</sub> and T<sub>HOT</sub> Avg indications to the ICS. The related key switch showed no indications of being faulty. The failed relay was manufactured by the Potter Brumfield Company and was a model KRP-14 AN, 120 V, 50-60 HZ relay.

Review of past incidents indicated no previous failures of this type. Although a large number of this type of relay are installed at Oconee Nuclear Station, failures of this type are rare.

Analysis of Occurrence:

The reactor tripped as designed and the unit was immediately stabilized in a safe condition. The post trip plant response was as expected. The switch of ICS function from Automatic to Manual by the operators in order to balance feedwater flow to reactor power did not prevent a high pressure reactor trip.

Two Main Steam Relief Valves (MSRVs), 1MS-2 and 1MS-10, did not reseal properly following the trip. Main steam pressure was reduced to about 900 psi before the MSRVs reseated. RCS temperature dropped to 545°F before the secondary response due to unseated MSRVs was stabilized. Other RCS parameters conformed to normal post-trip behavior. RCS inventory was controlled by opening 1HP-26 (RC Loop "A" Injection) with the 1A HPI Pump in operation for normal makeup.

Following the reactor trip, the Control Rod Drive (CRD) relative position indication was about 10% withdrawn (WD) with the absolute indication at 0% WD. The power supply for the relative position indication was replaced to make it agree with the absolute position indication of 0% WD.

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

Analysis of Occurrence (Cont'd):

There were no Engineered Safeguards (ES) actuations and the pressurizer relief valves were not challenged. There were no releases of radioactivity, no abnormal actuations and no abnormal 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 faulty T<sub>HOT</sub> indication relay and associated key switch were replaced. The unit was restarted and reached 100% full power at 1145 on May 13, 1984.

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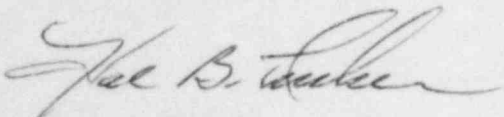
June 11, 1984

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

Subject: Oconee Nuclear Station, Unit 1  
Docket No. 50-269  
LER 269/84-02

Pursuant to 10 CFR 50.73 Sections (a)(1) and (d), attached is Licensee Event Report 269/84-02 concerning a Unit 1 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 May 12, 1984. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,



Hal P. Tucker

MAH/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator  
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11