

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) NORTH ANNA UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 9	PAGE (3) 1 OF 0 2
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TITLE (4)
UV OUTPUT CARD FAILURES

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)																																		
1	0	2 9 8 4	8 5	0 0 3	0 0 0	3	2	5 8 5			0 5 0 0 0																																		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (9) 4</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="6">POWER LEVEL (10) 0 1 0 1 0</td> <td>20.402(b)</td> <td>20.406(e)</td> <td>50.73(a)(2)(iv)</td> <td>73.71(b)</td> </tr> <tr> <td>20.406(a)(1)(i)</td> <td>50.36(e)(1)</td> <td>50.73(a)(2)(v)</td> <td>73.71(c)</td> </tr> <tr> <td>20.406(a)(1)(ii)</td> <td>50.36(e)(2)</td> <td>50.73(a)(2)(vii)</td> <td rowspan="3">X OTHER (Specify in Abstract below and in Text, NRC Form 365A)</td> </tr> <tr> <td>20.406(a)(1)(iii)</td> <td>50.73(a)(2)(i)</td> <td>50.73(a)(2)(viii)(A)</td> </tr> <tr> <td>20.406(a)(1)(iv)</td> <td>50.73(a)(2)(ii)</td> <td>50.73(a)(2)(viii)(B)</td> </tr> <tr> <td>20.406(a)(1)(v)</td> <td>50.73(a)(2)(iii)</td> <td>50.73(a)(2)(x)</td> <td>VOLUNTARY REPORT</td> </tr> </table>												OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)										POWER LEVEL (10) 0 1 0 1 0	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)	20.406(a)(1)(i)	50.36(e)(1)	50.73(a)(2)(v)	73.71(c)	20.406(a)(1)(ii)	50.36(e)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 365A)	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)(x)	VOLUNTARY REPORT
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LICENSEE CONTACT FOR THIS LER (12)

NAME E W. HARRELL	TELEPHONE NUMBER 7 0 3 8 9 4 - 5 1 5 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
X	J C	R J X	W 1 2 0	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE:) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT

On October 29, 1984, with Unit 2 in Mode 4, the Train A UV Output card was found to be failed during testing. The failure would have disabled a single train of automatic reactor trip circuitry. The failure did not affect the redundant automatic reactor trip circuitry or the manual reactor trip capability of either train.

North Anna has had two previous failures of the UV output card. Both previous failures were on Unit 2. None of the failures have occurred during power operation. The first failure occurred in April, 1980 and the second failure occurred in May, 1983 (see LER 83-039/03L-0).

This report is being submitted as a voluntary LER.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) NORTH ANNA POWER STATION	DOCKET NUMBER (2) 0 5 0 0 0 3 3 9	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 5	- 0 0 3	- 0 0	0 2	OF 0 2

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

The UV output card provides a 48 volt D.C. signal to the reactor trip breakers undervoltage coil during normal (untripped) conditions. Any automatic reactor trip signal will cause the UV output card to remove the 48 volt D.C. signal and trip the reactor by opening the reactor trip breakers.

Since 1978, three failures of the UV output cards have been identified. All three failures have been on Unit 2 and all failures would have disabled a single train of reactor protection. The failures were all due to a shorted transistor that would have maintained the 48 volt output of the card regardless of the status of the input. None of these failures has occurred during power operation.

The first failure was in April, 1980, prior to Unit 2 receiving an operating license. The second failure was in May, 1983 and the third in October, 1984. In all cases, the failures were detected prior to unit operation following an outage. In the first case, the Unit was not licensed at the time the failure was discovered. The failure on May 13, 1983 was preceded by maintenance on the BYA breaker (which is supplied by the "B" train UV output card). The failure on October 29, 1984, was preceded by the installation of the automatic shunt trip attachment that was installed by Design Change 84-05 during the 1984 refueling outage. Westinghouse was consulted to determine if multiple failures of this output card have occurred at other solid state protection plants. Westinghouse has only reported failures that occurred during outages after maintenance inside the reactor trip switchgear cubicles. This scenario coincides with the last two failures at North Anna.

For all three of the failures, the possibility existed to short out the UV output card during maintenance in the reactor trip breaker switchgear cubicle. The failure of a UV output card in the non-conservative condition has never occurred during power operation at North Anna. Since this failure has always been detected by testing prior to power operation and is believed to be caused by maintenance external to the solid state protection system, the safety consequences of this event are minimal.

Depending on plant specific testing sequences, an undetected failure could occur at power after maintenance or surveillance testing. Procedures at North Anna will be checked to verify that testing sequences minimize the possibility of a failure and to verify operability of the card prior to a return to service of a breaker on a operating plant.

NORTH ANNA POWER STATION
P.O. BOX 402
MINERAL, VIRGINIA 23117



March 25, 1985

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

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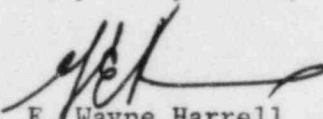
Dear Sirs:

The Virginia Power Company hereby submits the following License Event Report applicable to North Anna Unit No. 2.

Report No. LER 85-003-00

This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to Safety Evaluation and Control for their review.

Very Truly Yours,


E. Wayne Harrell
Station Manager

Enclosures (3 copies)

cc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

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