

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **North Anna Unit 2** DOCKET NUMBER (2) **0500031319** PAGE (3) **1 OF 4**

TITLE (4) **Reactor Trip Breaker Maintenance**

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)
05	05	84	84	003	000	05	17	84			05000
											05000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)

OPERATING MODE (9)	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 000	20.408(a)(1)(i)	50.38(a)(1)	50.73(a)(2)(v)	73.71(e)
	20.408(a)(1)(ii)	50.38(a)(2)	50.73(a)(2)(vi)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract Below and in Text, NRC Form 386A)
	20.408(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(vii)(A)	
	20.408(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(B)	
	20.408(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
E. Wayne Harrell	AREA CODE 703 894-5151

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)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On May 5, 1984, Unit 2 was taken off line in order to perform maintenance and testing on the reactor trip breakers. The maintenance and testing was completed and the Unit was back on line at 0055 on May 8, 1984. The maintenance performed was preventative and involved detailed inspections and lubrication. The tests were to detect long term degradation by measuring UV coil drop out voltage, trip bar actuation force and functional testing with additional weight on the trip bar to increase the force required to trip the breaker. Several minor problems were discovered, none of which would have impaired breaker operation.

IE22

8406010261 840517
PDR ADJCK 05000339
S PDR

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) North Anna Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 9 8 4	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 4	0 0 3	0 0	0 2	OF 0 4

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

On May 5, 1984, Unit 2 was taken off line in order to perform maintenance and testing on the reactor trip breakers. The maintenance and testing was completed and the unit was back on line at 0055 on May 8, 1984. The maintenance performed was preventative and involved detailed inspections and lubrication. The tests were to detect long term degradation by measuring UV coil drop out voltage, trip bar actuation force and functional testing with additional weight on the trip bar to increase the force required to trip the breaker. Several minor problems were discovered, none of which would have impaired breaker operation.

A summary of the maintenance that was performed is as follows:

RTA "A" Train Main Reactor Trip Breaker

- 1) Movable main contacts for phase "A" and "C" were replaced due to silver plating flaking from the contacts. This would not affect breaker operation.
- 2) The breaker positioning stop bracket was replaced. This broken bracket was previously identified and does not affect the ability of the breaker to open on demand.

RTB "B" Train Main Reactor Trip Breaker

- 1) The control relay linkage was adjusted in accordance with the maintenance procedure. The control relay only affects electrical closing of the breaker.

BYA "A" Bypass Reactor Trip Breaker (used only for testing)

- 1) A retaining ring and bushing on the reset arm for the UV trip device was missing and the device was replaced as a preventative measure. The UV device was not tested as part of the breaker assembly but was bench tested and found to function normally. The missing bushing was on the reset arm pivot which would have no affect on the trip function of the device.
- 2) The breaker positioning stop bracket was replaced. This broken bracket was previously identified and does not affect the ability of the breaker to open on demand.

BYB "B" Bypass Reactor Trip Breaker (used only for testing)

- 1) The UV trip device was replaced. The relay operated the breaker satisfactorily as found; however, during the test with the additional weight on the trip bar the relay did not operate. The Westinghouse Technical Representative adjusted the UV trip device and it was tested satisfactorily several times. However, it did not operate as smoothly as the other breaker. The device was replaced as a preventative measure.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) North Anna Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 9 8 4 -	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
			0 0 3 -	0 0	0 3	OF

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

BYB "B" Bypass Reactor Trip Breaker (used only for testing) Continued

- 2) The force required to actuate the trip bar was found to be slightly high. The operating mechanism was lubricated and the force required to trip the breaker was returned to an acceptable value.
- 3) Some auxiliary contacts on the breaker were straightened to assure proper seating. These contacts would not affect the ability of the breaker to open.
- 4) The control relay linkage was adjusted in accordance with the maintenance procedure. The control relay only affects electrical closing of the breaker.

The Reactor Trip Breaker testing and maintenance consisted mainly of the recommended steps in the manufactures technical bulletins for the Westinghouse DB-50 breakers. The procedure involved detailed inspections of the cubicle extension rails, breaker support wheels, the tripper bar, arc chutes and contacts, UV trip device, linkages, wiring, coils and relays. In addition, the UV trip device was inspected for: cleanliness, free operation by hand, wire insulation cracks and signs of insulation degradation.

Several quantitative and qualitative tests were also performed on all of the Unit 2 reactor trip breakers. The voltage at which the UV trip device de-energizes was measured before and after lubrication. These voltages will be used as a basis for future testing to indicate degradation of the device due to drag or friction. The force required to actuate the trip bar was also measured. This force would indicate a friction increase or binding if it were to exceed a recommended force of 31 ounces. Finally, a 20 ounce weight is added to the trip bar to raise the actuating force required and the UV trip device is functionally tested. This test is a go/no go test, but it can also be qualitatively evaluated for smooth operation under loaded conditions.

The undervoltage trip device is restrained and the shunt trip device is tested using an external power source. The clearance between the shunt trip lever and the trip bar is measured to be sure it is within tolerance. After the UV trip device and the shunt trip device have been tested independently with the breaker out of the cubicle, the cubicle is inspected and the breaker is inserted into connect and then tripped using the UV trip device and the shunt trip independently from both manual reactor trip switches in the Control Room.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) North Anna Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 3 9 8 4	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
			0 0 3	0 0	0 4	OF 0 4

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

In conclusion, very thorough testing of the reactor trip breakers was performed and the breakers were found to be operable. The breakers are normally cycled every other month on a staggered test basis during the Solid State Protection Functional Test. A few minor problems were detected and corrected but none of these problems would have prevented any of the breakers from opening. The UV trip attachments that were replaced were on the bypass breakers which are only used during at power testing of the main reactor trip breakers.



VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

P. O. BOX 402

MINERAL, VIRGINIA 23117

May 17, 1984

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

Serial No. N-84-007

NO/DAH: 11

Docket No. 50-339

License No. NPF-7

Dear Sirs:

Pursuant to North Anna Power Station Technical Specifications, the Virginia Electric and Power Company hereby submits the following License Event Report applicable to North Anna Unit No. 2.

Report No.

LER 84-003-00

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: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

IE22
1/1