

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) NORTH ANNA POWER STATION, UNIT 1										DOCKET NUMBER (2) 0 5 0 0 0 3 3 8				PAGE (3) 1 OF 0 2											
TITLE (4) SHUTDOWN REQUIRED BY TECHNICAL SPECIFICATIONS, REACTOR PROTECTION SYSTEM INSTRUMENTATION CHANNELS INOPERABLE																									
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	2	2	4	8	5	8	5	0	2	7	0	0	0	1	1	6	8	6	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)																							
MODE 2		20.402(b)				20.406(c)				50.73(a)(2)(iv)				73.71(b)											
POWER LEVEL (10)		20.406(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)											
0 1 0 1 0		20.406(a)(1)(iv)				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)				X 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 E. WAYNE HARRELL, STATION MANAGER										TELEPHONE NUMBER 7 0 3 8 9 4 1 5 1 5 1															
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															
X	A	B	I	S	V	R	I	3	4	1	0	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 December 24, 1985 at 0311 hours, a Unit 1 reactor shutdown was commenced from a critical condition at approximately 0% reactor power (Mode 2 Startup). Loop B Delta T/Tavg ($\Delta T/T_{avg}$) Protection Channel II was declared inoperable at 0235 hours on December 24 and Channel III had been in a tripped condition since 0254 hours on December 23. This placed the unit outside the Action Statements of Technical Specifications 3.3.1.1 and 3.3.2.1 and required the unit to be in Hot Standby (Mode 3) within 6 hours in accordance with Technical Specification 3.0.3.

Channel II inoperability was determined to be caused by a change in the resistance characteristics of the Loop B cold leg resistance temperature detector (RTD) causing the downstream process instrumentation to supply incorrect values for the Channel II $\Delta T/T_{avg}$ signals. The spare cold leg RTD was connected as the input to the process instrumentation for Channel II at 0635 hours on December 24 and the channel was declared operable, allowing startup under the Action Statements. This event is reportable pursuant to 10 CFR 50.73(a)(2)(i)(A).

Unit startup was commenced at 0720 hours on December 24 and the unit was taken critical at 0750 hours the same day.

8601230183 860116
PDR ADOCK 05000338
S PDR

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
NORTH ANNA POWER STATION, UNIT 1	050003388	85	027	00	02	OF	02

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

On December 24, 1985 at 0235 hours, Unit 1 operations personnel noticed that Loop B Delta T/Tavg ($\Delta T/T_{avg}$) Protection Channel II was indicating a significant difference from Loop A Channel I and declared Channel II inoperable. Loop C $\Delta T/T_{avg}$ Protection Channel III had been declared inoperable at 0254 hours on December 23 due to a significant difference from the remaining channels and was subsequently placed in a tripped condition in accordance with Technical Specifications 3.3.1.1 and 3.3.2.1. This condition created a one-out-of-three coincidence for overpower and overtemperature delta T (OP ΔT and OT ΔT) reactor trip signals, preventing Protection Channel II from being placed in trip without completing the necessary two-out-of-three logic required to generate an automatic reactor trip signal.

Unit 1 had recently completed a refueling outage, returning to criticality at 2032 hours on December 23, and was stable at approximately 0% reactor power (Mode 2 Startup), while conducting low power physics testing. At 0311 hours on December 24 a reactor shutdown was commenced in accordance with Technical Specification 3.0.3 due to two out of three $\Delta T/T_{avg}$ protection channels being inoperable, a condition not addressed by the Action Statements of Technical Specifications 3.3.1.1 and 3.3.2.1. A Notification of Unusual Event was declared at this time due to the initiation of a forced plant shutdown. At 0326 hours on December 24, the unit was placed in Hot Standby (Mode 3) in accordance with Technical Specification 3.0.3 and the Notification of Unusual Event was terminated at 0341 hours on December 24 in accordance with the Emergency Plan. This event is reported pursuant to 10 CFR 50.73(a)(2)(i)(A).

Investigation revealed that the error in $\Delta T/T_{avg}$ Protection Channel II was related to the Loop B cold leg resistance temperature detector (RTD) (EIIS Component Identifier TE). The resistance characteristics of the RTD had changed since installation requiring recalibration of the downstream process instrumentation for Channel II. The RTD is manufactured by Weed Instrument Company (vendor reference number W108), Model N90075-2B.

$\Delta T/T_{avg}$ Protection Channel II was declared operable at 0635 hours on December 24 using the installed spare cold leg RTD as input to the process instrumentation, allowing unit startup under the Action Statements of Technical Specifications 3.3.1.1 and 3.3.2.1. Startup was commenced at 0720 hours on December 24 and the unit was taken critical at 0750 hours the same day.

The inoperable condition of $\Delta T/T_{avg}$ Protection Channel III was the result of a disc-stem separation of 1-RC-88, the Loop C RTD bypass line isolation valve (EIIS Component Identifier ISV) downstream of the cold leg RTD manifold. This created a reduced flow condition through the cold leg portion of the RTD bypass line resulting in inaccurate inputs from the cold leg RTD to $\Delta T/T_{avg}$ Protection Channel III. This valve is a 2 inch Rockwell Manufacturing Company (vendor reference number R340) T-58 globe stop valve. In a subsequent shutdown, the valve was replaced and $\Delta T/T_{avg}$ Protection Channel III was returned to service at 1720 hours on January 5, 1986.



VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

P. O. BOX 402

MINERAL, VIRGINIA 23117

January 16, 1986

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

Serial No. N-85-043
NO/PLB: nih
Docket No. 50-338

License No. NPF-4

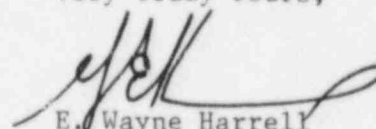
Dear Sirs:

The Virginia Electric and Power Company hereby submits the following
Licensee Event Report applicable to North Anna Unit 1.

Report No. LER 85-027-00

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
for 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 30325

IE22
11