

# Vepco

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

P. O. BOX 402

MINERAL, VIRGINIA 29117

10 CFR 50.73

April 9, 1993

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

NAPS:MPW  
Docket Nos. 50-338  
License Nos. NPF-4

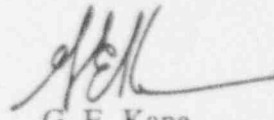
Dear Sirs:

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

Report No. 50-338/93-003-01

This Report has been reviewed by the Station Nuclear Safety and Operating Committee and will be forwarded to the Corporate Management Safety Review Committee for its review.

Very Truly Yours,



G. E. Kane  
Station Manager

Enclosure:

cc: U.S. Nuclear Regulatory Commission  
101 Marietta Street, N.W.  
Suite 2900  
Atlanta, Georgia 30323

Mr. M. S. Lesser  
NRC Senior Resident Inspector  
North Anna Power Station

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## LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  
North Anna Power Station Unit 1

DOCKET NUMBER (2)  
050003381

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TITLE (4) EMERGENCY DIESEL GENERATOR LOAD SEQUENCING TIMER SETPOINT DRIFT DUE TO POOR REPEAT ACCURACY OF THE AGASTAT 2400/7000 SERIES TIMERS

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 NUMBERS
0	1	22	93	003	01	0	4	09		050003381
OPERATING MODE (9) 6			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)							
POWER LEVEL (10) 000			20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)	
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vi)		OTHER (Specify in Abstract below and in Text, NRC Form 306A)	
			20.405(a)(1)(iii)		<input checked="" type="checkbox"/> 50.73(a)(2)(i)		50.73(a)(2)(vii)(A)			
			20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(2)(vii)(B)			
			20.405(a)(1)(v)		50.73(a)(2)(iii)		50.73(a)(2)(viii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME  
G. E. Kane

TELEPHONE NUMBER

AREA CODE

703894-2101

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	
B	E	K	T	M	R	A	1	0	9	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

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

On January 22, 1993, with Unit 1 in Refueling, Mode 6, it was determined during Emergency Diesel Generator load sequencing timer testing that three Control Rod Drive Mechanism cooling fans had timers that drifted outside their setpoint tolerance listed under Technical Specification (TS) Table 4.8-1. In addition, a containment recirculating air fan timer was found outside its setpoint tolerance. On January 26, 1993, a standby primary grade water pump timer was found outside its setpoint tolerance. On March 26, 1993, with Unit 1 in Cold Shutdown (Mode 5), it was discovered that on March 5, 1993, the 1 "A" Component Cooling (CC) Pump had two timers with the "as found" setpoint tolerance outside the limits listed under TS Table 4.8-1. These conditions are prohibited by the TS, and are reportable pursuant to 10CFR50.73 (a) (2) (i) (B).

The cause of the event is setpoint drift due to poor repeat accuracy of the Agastat 2400/7000 series time delays. The CC pump timers were replaced with solid state timers during the current Unit 1 refueling outage.

Engineering performed an evaluation to review the impact that setpoint drift of timers would have on the operation of the EDG load sequencing scheme and determined that no significant safety consequences resulted from this event. Therefore, the health and safety of the public were not affected at any time due to this event.

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TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 305A, (17)

1.0 Description of the Event

On January 22, 1993, with Unit 1 in Refueling (Mode 6), it was determined during Emergency Diesel Generator (EDG) (EIIS System Identifier EK, Component Identifier DG) load sequencing timer (Component Identifier TMR, Vendor A109, Model Numbers 7012AD, and 7012PE) testing that five timers had drifted outside their setpoint tolerance listed under Technical Specification (TS) Table 4.8-1. Three timers were associated with Control Rod Drive Mechanism (CRDM) cooling fans (EIIS CD-FAN), one was for a containment air recirculation fan (EIIS BK-FAN), and one was for a standby primary grade water pump (EIIS System Identifier CA, Component Identifier P). On March 26, 1993, with Unit 1 in Cold Shutdown (Mode 5), it was discovered that on March 5, 1993, the 1 "A" Component Cooling Pump (EIIS System Identifier CC, Component Identifier P) had two timers (Component Identifier TMR, Vendor A109) with the "as found" setpoint tolerance outside the limits listed under TS Table 4.8-1. These conditions are prohibited by the TS, these events are reportable pursuant to 10CFR50.73 (a) (2) (i) (B).

Timer 1HVRA04-62 for the "A" CRDM fan was found outside its specified range of 9.5 to 10.5 seconds at 9.35 seconds. This timer prevents automatic restart of 1-HV-F-37A (CRDM Cooling Fan) for 10 seconds.

Timer 1HVRD04-62 for the "D" CRDM fan was found outside its specified range of 9.50 to 10.50 seconds at 9.46 seconds. This timer prevents automatic restart of 1-HV-F-37D (CRDM Cooling Fan) for 10 seconds.

Timer 1HVRF04-62 for the "F" CRDM fan was found outside its specified range of 9.5 to 10.5 seconds at 9.19 seconds. This timer prevents automatic restart of 1-HV-F-37F (CRDM Cooling Fan) for 10 seconds.

Timer 1HVRA03-62 for the "A" containment air recirculation fan was found outside its specified range of 28.50 to 31.50 seconds at 27.65 seconds. This timer prevents manual restart of 1-HV-F-1A containment air recirculation fan for 30 seconds.

Timer 1PGSB02-62A for the "B" standby primary grade water pump was found outside its specified range of 9.50 to 10.50 seconds at 9.18 seconds. This timer prevents automatic restart of the 1-PG-P-2B, standby primary grade water pump, for 10 seconds.

Timer 1CCPA01-62Y for the "A" component cooling water pump was found outside its specified range of 14.25 to 15.75 seconds at 15.8 seconds. This timer prevents automatic restart of the 1-CC-P-1A, component cooling water pump, for 15 seconds.

Timer 1CCPA01-62X for the "A" component cooling water pump was found outside its specified range of 19.00 to 21.00 seconds at 18.4 seconds. This timer prevents automatic restart of the 1-CC-P-1A, component cooling water pump, after 20 seconds.

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

1.0 Description of the Event (continued)

The component cooling water pump timers were previously identified for replacement as part of the corrective actions for with LER N1-92-005-00. The "as found" data recorded was that of the Agastat timers. These timers were replaced under Design Change Package 92-306 EDG Load Sequencing Timer Replacement.

Each timer prevents restart of its associated equipment to ensure sufficient margin exists to allow the diesel to increase back to rated speed prior to the next load block.

2.0 Significant Safety Consequences and Implications

The EDG load sequencing scheme is provided to ensure the EDGs have sufficient time to recover to rated speed following the start of safety equipment in the previous load block. Load sequencing timers are set in accordance with TS requirements to start equipment at appropriate times with respect to their load block. An engineering evaluation reviewed the impact that setpoint drift of timers would have on the operation of the EDG load sequencing scheme and determined that no significant safety consequences resulted from this event. Therefore, the health and safety of the public were not affected at any time due to this event.

3.0 Cause of the Event

The cause of the event is setpoint drift due to poor repeat accuracy of the Agastat 2400/7000 series time delays.

4.0 Immediate Corrective Actions

Four of five timers were reset and successfully tested within their TS tolerance limits. The fifth timer, 1HVRD04-62, was replaced during the current Unit 1 refueling outage.

The two component cooling water pump timers were replaced and successfully tested within their TS tolerance limits.

5.0 Additional Corrective Actions

A program was previously established to systematically replace the Agastat 2400/7000 series time delays on a priority basis. A total of five for 1H bus and three for 1J bus were also replaced during the 1993 Refueling Outage. Future replacements will be evaluated on a case by case basis.

6.0 Actions to Prevent Recurrence

Replacement of the Agastat 2400/7000 series time delays with Allen-Bradley RTC solid state timers will eliminate the poor repeat accuracy problem.

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TEXT (If more space is required, use additional NRC Form 305A's) (17)

7.0 Similar Events

LER N1/2-91-018-00 documents a failure to perform time response testing on the 72% undervoltage relays and associated time delay settings outside TS requirements.

LER N2-91-005-00 documents a degraded voltage relay time delay setting outside its TS tolerance limit.

LER N2-92-004-00 documents the setpoint drift of two Unit 2 timer relays during the performance of the Emergency Diesel Generator load sequencing timer testing.

LER N1-92-005-00 documents the setpoint drift of four Unit 1 timer relays during the performance of the Emergency Diesel Generator load sequencing timer testing.

8.0 Additional Information

Unit 2 was operating in Mode 1 when the deviation was discovered and was not affected by this event.