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VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
P. O. BOX 402
MINERAL, VIRGINIA 25117

10 CFR 50.73

March 24, 1992

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

Serial No. N-92-08
NAPS:WCI
Docket Nos. 50-338
License Nos. 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. 50-338/92-006-00

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) 05000338	PAGE (3) 1 OF 03
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TITLE (4)
MANUAL REACTOR TRIP DURING STARTUP WHEN FOUR RODS DROPPED INTO THE CORE

EVENT DATE (6)			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)
03	05	92	92	006	00	03	24	92		05000011
										DOCKET NUMBER(S) 05000011

OPERATING MODE (9) 3

POWER LEVEL (10) 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 6. (Check one or more of the following) (11)

20.402(b)	20.405(a)(1)(i)	20.405(a)(1)(ii)	20.405(a)(1)(iii)	20.405(a)(1)(iv)	20.405(a)(1)(v)	20.405(a)(1)(vi)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)	50.73(a)(2)(viii)	50.73(a)(2)(ix)	73.71(b)	73.71(c)	OTHER (Specify in Abstract Table and in Form NRC Form 304)

LICENSEE CONTACT FOR THIS LER (12)

NAME: G. E. Kane, Station Manager

TELEPHONE NUMBER: 703 894-2101

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									
X	A	A	E	C	P	D	W	1	2	0	Y							

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 three single-space typewriter lines) (16)

On March 5, 1992, during the performance of a Unit 1 startup, a manual reactor trip was initiated when operators in the control room observed that Group 2 of Control Bank "B" dropped into the core from 80 steps. The reactor trip breakers were manually opened in accordance with the appropriate Abnormal Procedure (AP-1.2) due to more than one control rod being dropped. All other control rods properly inserted upon the manual trip. This event is reportable pursuant to 10CFR50.73 (a)(2)(iv), and a four hour report was made in accordance with 10CFR50.72 (b)(2)(ii).

The probable cause of the event was failure of a Control Rod Drive Mechanism (CRDM) firing card. The card was subjected to aging due to excessive heat in the power cabinet. Upon visual inspection of the card, circumferential cracks in the soldering joints were noted.

This event posed no significant safety implications because the four control rods fully inserted into the subcritical reactor to a safe position upon failure of the CRDM firing card. In addition, the Reactor Protection System responded as designed upon the manual reactor trip. Therefore, the health and safety of the public was not affected at any time during this event.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 90.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-55), 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)

DOCKET NUMBER (2)

LER NUMBER (6)

PAGE (3)

North Anna Power Station Unit 1

YEAR

SEQUENTIAL NUMBER

REVISION NUMBER

0 | 5 | 0 | 0 | 0 | 3 | 3 | 8 | 9 | 2 | -- | 0 | 0 | 6 | -- | 0 | 0 | 0 | 2 | OF | 0 | 3

TEXT (if more space is required, use additional NRC Form 306A's) (17)

1.0 Description of the Event

On March 5, 1992, during the performance of a Unit 1 startup, a manual reactor trip was initiated when operators in the control room observed that Group 2 of Control Bank 'B' dropped into the core from 80 steps. The reactor trip breakers were manually opened in accordance with the appropriate Abnormal Procedure (AP-1.2) due to more than one control rod being dropped. All other control rods properly inserted upon the manual trip.

Technicians replaced the associated Control Rod Drive Mechanism (CRDM) (EIS System Identifier AA), firing card (Component Identifier ECBD, Vendor W120), and another reactor start-up commenced following management review of the corrective action performed. At 0611 hours on March 5, 1992, reactor criticality was successfully achieved. This event is reportable pursuant to 10CFR50.73 (a)(2)(iv), and a four hour report was made in accordance with 10CFR50.72 (b)(2)(ii).

2.0 Significant Safety Implications

This event posed no significant safety implications because the four control rods fully inserted into the subcritical reactor to a safe position upon failure of the CRDM firing card. In addition, the Reactor Protection System (EIS System Identifier JE) responded as designed upon the manual reactor trip. Therefore, the health and safety of the public was not affected at any time during this event.

3.0 Cause of the Event

The probable cause of the event was failure of a CRDM firing card. Upon inspection of the card, circumferential cracks in the soldering joints were identified. When heat is applied to these cracks, they can expand and cause the card to fail. It is believed that these cracks were caused by excessive heat in the power cabinet.

Due to recurring problems with temperature control in the control rod drive rooms and cable vaults at North Anna, new air conditioning systems were installed for both units during 1991 under DCP-90-14. In addition, undersized pressurizer heater cables were replaced with the appropriate size to reduce heat generation in the Unit 1 cable vaults. A similar replacement is currently being performed for Unit 2. These actions have corrected the overheating problem in the cable vaults and control rod drive rooms.

4.0 Immediate Corrective Actions

The reactor trip breakers were manually opened in accordance with the appropriate Abnormal Procedure (AP-1.2) due to more than one control rod being dropped.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION, REQUEST: 550 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

LER NUMBER (3)

PAGE (3)

North Anna Power Station Unit 1

YEAR

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

5.0 Additional Corrective Actions

The subject firing card was removed and visually inspected. Since cracks in the soldering joints were identified, the cards in the Unit 2 CRDM power cabinet are being inspected for similar indications. The remaining Unit 1 cards cannot be inspected at this time since the unit is in operation; however, they will be inspected during the next outage of sufficient duration.

6.0 Action Required to Prevent Recurrence

During the next Unit 1 shutdown of sufficient duration, the Unit 1 CRDM firing cards will be visually inspected. Cards showing indications of excessive heat exposure will be repaired or replaced as required. Based on the results of this inspection, a Preventative Maintenance program may be developed to routinely inspect the subject cards.

7.0 Similar Events

LER N1-84-026-01 documents a reactor trip from 100% power due to a failed firing card in the rod control system resulting in four rods being dropped. The dropped control rods resulted in a negative flux rate reactor trip. Westinghouse was consulted, and it was determined that the event was an isolated failure.

LER N1-85-017-01 documents a manual reactor trip from 16% power when control bank D group 1 dropped into the core. The cause of the dropped control rods was determined to be an intermittent fault in the alarm circuit associated with Power Cabinet 1BD.

8.0 Additional Information

North Anna Unit 2 was in Mode 5 during this incident and was not affected.