NRC Form 366
(5.83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
NORTH ANNA POWER STATION, UNIT 1	0 5 0 0 0 3 3 8	1 OF 0 4

TITLE (4)

LOSS OF RHR CAPABILITY DUE TO FAILED SOLENOID OPERATED VALVE

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)
										0 5 0 0 0
0 3	1 5	8 8	8 8	0 1 2	0 0	0 4	0 8	8 8		0 5 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)			
1	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10): 1 0 0	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)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
G. E. Kane, Station Manager	7 0 3 8 9 4 - 5 1 5 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
X	C C	F S V	A 4 9 9	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

At 2158 hours on March 15, 1988, with Unit 1 at 100 percent power (Mode 1), both Residual Heat Removal (RHR) subsystems were declared inoperable for approximately 40 minutes due to isolation of component cooling (CC) water to both RHR heat exchangers and RHR pump mechanical seal coolers. Component cooling water was isolated in order to perform required maintenance on the solenoid operated valve (SOV) for containment isolation valve, 1-CC-TV-103B. 1-CC-TV-103B, the CC return isolation valve for the 'B' RHR heat exchanger and both RHR pump seal coolers, failed to stroke closed within the time specified by Technical Specification 3.6.3.1. Since no replacement parts were available, and 1-CC-TV-103B could not be isolated without affecting both RHR subsystems, the SOV was replaced with the SOV from 1-CC-TV-103A. Since 1-CC-TV-103A is the CC return isolation valve from the 'A' RHR heat exchanger, CC to both RHR subsystems was isolated when both valves were tagged out to interchange the SOVs. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B).

The cause of this event was the failure of the containment isolation valve, 1-CC-TV-103B, to stroke closed within the required time limit, compounded by the lack of spare parts to repair the failed SOV. As a corrective action, the SOV from 1-CC-TV-103A was installed on 1-CC-TV-103B, and the SOV from 1-CC-TV-103B was refurbished and installed on 1-CC-TV-103A. Both valves were satisfactorily stroked. The health and safety of the public were not affected at any time during this event.

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

1.0 Event Description

At 2158 hours on March 15, 1988, with Unit 1 at 100 percent power (Mode 1), both Residual Heat Removal (RHR) subsystems (EIIS System Identifier BP) were declared inoperable for approximately 40 minutes due to isolation of component cooling (CC) water (EIIS System Identifier CC) to both RHR heat exchangers (EIIS Component Identifier HX) and RHR pump mechanical seal coolers (EIIS Component Identifier CLR). Component cooling water was isolated in order to perform required maintenance on the solenoid operated valve (SOV) for containment isolation valve, 1-CC-TV-103B. 1-CC-TV-103B, the CC return isolation valve for the 'B' RHR heat exchanger and both RHR pump seal coolers, failed to stroke closed within the time specified by Technical Specification 3.6.3.1. Since no replacement parts were available, and 1-CC-TV-103B could not be isolated without affecting both RHR subsystems, the SOV was replaced with the SOV from 1-CC-TV-103A. Since 1-CC-TV-103A is the CC return isolation valve from the 'A' RHR heat exchanger, CC to both RHR subsystems was isolated when both valves were tagged out to interchange the SOVs. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B).

At 1815 hours on March 15, 1988, 1-CC-TV-103B failed to stroke closed within the required time limit specified by T.S. 3.6.3.1, Table 3.6-1. 1-CC-TV-103B is a containment isolation valve located on the return line from the 'B' RHR heat exchanger and both RHR pump seal coolers. Subsequently, a four hour action statement was entered.

At approximately 2130 hours on March 15, 1988, it was determined that the valve could not be repaired within the four hour Action Statement time limit because no spare parts were available. Isolation of this valve, per the action statement of T.S. 3.6.3.1, would have rendered both RHR pumps inoperable due to the isolation of component cooling water return from the mechanical seal coolers. Therefore, it was decided to replace the SOV from 1-CC-TV-103B with the SOV from 1-CC-TV-103A in order to return 1-CC-TV-103B to operable status.

At 2143 hours on March 15, 1988, 1-CC-TV-103A was de-energized and tagged so that the SOV could be removed from the valve. At this time a seven day action statement was entered in accordance with T.S. 3.7.9.1. T.S. 3.7.9.1 requires that with one RHR subsystem inoperable, the inoperable subsystem must be restored to operable status within seven days or be in Hot Shutdown within the next 24 hours. At 2158 hours, 1-CC-TV-103B was de-energized and tagged. At this time, the one hour action statement of T.S. 3.0.3 was entered due to both RHR subsystems being inoperable.

At 2222 hours, a four hour report was made to the Nuclear Regulatory Commission, pursuant to 10CFR50.72(A)(2)(i)(B), due to both RHR subsystems being inoperable. At 2232 hours on March 15, 1988, 1-CC-TV-103B was stroked satisfactorily using the SOV from 1-CC-TV-103A. Subsequently, one RHR loop was restored to operable status and the action statement of T.S. 3.0.3 was cleared.

The SOV, which was originally on 1-CC-TV-103B, was cleaned and rebuilt. At 0220 hours on March 16 1988, the rebuilt SOV was installed on 1-CC-TV-103A, and the valve was stroked satisfactorily. The seven day action statement of T.S. 3.7.9.1 was cleared at 1200 hours on March 16, 1988.

2.0 Safety Consequences

No significant safety consequences resulted from this event, because the RHR loops were only unavailable for a period of approximately forty minutes. RHR is not utilized until the unit has reached 350 degrees F. Since normal operating temperature is approximately 587 degrees F, 350 degrees F would not be reached until at least two hours after reaching Hot Standby. Also, because the reactor coolant loops and the steam generators were operable, cooldown capability via both the condenser and atmospheric steam dumps was available.

3.0 Cause of the Event

The cause of this event was the failure of a containment isolation trip valve, 1-CC-TV-103B, to stroke closed within the time specified by T.S., compounded by the lack of spare parts to repair the failed SOV. The cause of the SOV failure is unknown, at this time, but is currently under investigation.

4.0 Immediate Corrective Action

As an initial corrective action, the SOV from 1-CC-TV-103A was installed on 1-CC-TV-103B and stroked satisfactorily. At this time, the one hour action statement of T.S. 3.0.3 was cleared because one RHR subsystem had been returned to operable status.

5.0 Additional Corrective Action

As an additional corrective action, the SOV, removed from 1-CC-TV-103B, was inspected, cleaned, and then reinstalled on 1-CC-TV-103A. 1-CC-TV-103A was stroked satisfactorily, and full RHR capability was restored at 1200 hours on March 16, 1988, clearing the seven day action statement of T.S. 3.7.9.1.

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

6.0 Similar Events

Similar reportable events involving valve SOV failures at North Anna are listed below:

LER 88-011-00

7.0 Additional Information

Replacement SOVs and repair kits, have been on order with the manufacturer for several months.

10 CFR 50.73

Vepco

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

April 8, 1988

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

Serial No. N-88-015
NO/MLT: 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 88-012-00

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,

G. E. Kane
Station Manager

Enclosure

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

Mr. J. L. Caldwell
NRC Senior Resident Inspector
North Anna Power Station

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