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VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION
P. O. BOX 402
MINERAL, VIRGINIA 22117

10 CFR 50.73

May 4, 1992

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

Serial No. N-92-17
NAPS:WCH
Docket Nos. 50-339
License Nos. NPF-7

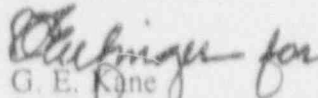
Dear Sirs:

The Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Unit 2.

Report No. 50-339/92-010-00

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 2		DOCKET NUMBER (2) 05000339	PAGE (3) 1 OF 03
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TITLE (4) COLD LEG SAFETY INJECTION BRANCH LINE FLOW BELOW TECHNICAL SPECIFICATION REQUIREMENTS

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 NAME	DOCKET NUMBER(S)
04	13	92	92	010	00	05	04	92		05000339
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)								
5		20.402(b)			20.405(i)			50.73(a)(2)(iv)		
POWER LEVEL (10)		20.405(a)(1)(i)			50.36(i)(1)			50.73(a)(2)(v)		
000		20.405(a)(1)(ii)			50.36(i)(2)			50.73(a)(2)(vi)		
		20.405(a)(1)(iii)			<input checked="" type="checkbox"/> 50.73(a)(2)(i)			50.73(a)(2)(vii)		
		20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)		
		20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)		
		20.405(a)(1)(vi)			50.73(a)(2)(iv)			50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME G. E. Kane, Station Manager	TELEPHONE NUMBER AREA CODE: 703 703 894-2101
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR

ABSTRACT (Limit to 7400 spaces, i.e., approximately three single-space typewriter lines) (16)

On April 13, 1992, with Unit 2 in Mode 5 (Cold Shutdown), while reviewing High Head Safety Injection (HHSI) flow balance test results, it was determined that the "as-found" cold leg branch line flows were insufficient to meet Technical Specification (TS) requirements. TS 4.5.2.h requires the sum of the branch line flows, excluding the highest branch flow, be greater than or equal to 384 gpm. Using the single most limiting HHSI pump the sum of the two lowest existing branch flows was 347 gpm. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B).

The most probable cause of the event is repositioning of the valves using stem height measurement. When the insufficient flows were discovered, the throttle valves were adjusted so that the two lowest flow branch lines are now equal to or greater than 384 gpm.

No significant safety consequences resulted from this event because a previous analysis has shown that the effect of the existing flows on the limiting small break loss of coolant accident (SBLOCA) analysis would have been to increase peak clad temperature (PCT) from 1749°F to 1882°C. Thus, PCT would have remained well within the 2200°F limit of 10CFR50.46. Therefore, the health and safety of the public were 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: 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)	DOCKET NUMBER (2)	LER NUMBER (3)				PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
North Anna Power Station Unit 2	05000339	92	010	00	02	OF 03

TEXT (if more space is needed, use additional NRC Form 366A) (17)

1.0 Description of the Event

On April 13, 1992, with Unit 2 in Mode 5 (Cold Shutdown), while reviewing High Head Safety Injection (HHSI) (EHS System Identifier BQ) flow balance test results, it was determined that the "as-found" cold leg branch line flows were insufficient to meet Technical Specification (TS) requirements. TS 4.5.2.h requires the sum of the branch line flows, excluding the highest branch flow, be greater than or equal to 384 gpm. Using the single most limiting HHSI pump (Component Identifier P) the sum of the two lowest existing branch flows was 347 gpm. This event is reportable pursuant to 10CFR50.73(a)(2)(i)(B).

2.0 Significant Safety Consequences and Implications

No significant safety consequences resulted from this event because a previous analysis has shown that the effect of the existing flows on the limiting small break loss of coolant accident (SBLOCA) analysis would have been to increase peak clad temperature (PCT) from 1749°F to 1882°F. Thus, PCT would have remained well within the 2200°F limit of 10CFR50.46. Therefore, the health and safety of the public were not affected at any time during this event.

3.0 Cause of the Event

The most probable cause of the event is repositioning of the valves using stem height measurement. During the Unit 1 1991 refueling outage, it was determined that the throttle valves are highly sensitive to valve position, and the stem height measurement is not an effective means of positioning. Therefore, the Operations Procedure (OP) 2-OP-7.2A "Valve Checkoff-HHSI" was revised to require performance of the flow balance procedure when valves are repositioned.

The performance of the Unit 2 HHSI branch line flow balance test during the 1990 Unit 2 refueling outage utilized strap-on ultrasonic flow meters which were specifically calibrated for the test to have an error of less than one percent, and the sum of the flows in the branch lines agreed well with header flow measured by an installed sharp edged orifice. Stem height measurements were taken to help position the valves. Following the performance of the flow balance, during installation of locking devices, one or more of the valve stems may have been moved. A special containment entry was made to verify positions and correct them using stem height measurement. This evolution is the most probable cause of the event.

4.0 Immediate Corrective Actions

When the insufficient flows were discovered, the throttle valves were adjusted so that the two lowest flow branch lines are now equal to or greater than 384 gpm for both normal cold leg and hot leg Safety Injection (SI).

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-590), 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 2	DOCKET NUMBER (2) 50-339/90-008-00	LER NUMBER (6)			PAGE (3)	
		YEAR 92	SEQUENTIAL NUMBER 010	REVISION NUMBER 00		

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

5.0 Additional Corrective Actions

Following repositioning the valves, stem lock covers were installed on each throttle valve and the keyholes were injected with a sealant material. The locking cap nuts that caused a problem in the previous outage are no longer used. This will ensure the position of the valve is not routinely moved during valve lineups or other evolutions.

Nuclear Safety Analysis performed a review of the prior assessment of low HHSI flows and determined that the acceptance criteria of 10CFR50.46 continues to be satisfied.

6.0 Actions to Prevent Recurrence

A TS change package for TS 4.5.2.h. is being developed based on the latest Nuclear Safety Analysis. This submittal will reduce the minimum flow required.

7.0 Similar Events

LER 50-339/90-008-00 for Unit 2 documents the sum of the branch flows, excluding the highest branch flow, being less than the TS minimum requirement on October 20, 1990. The cause of the event was attributed to mispositioning of the SI branch flow throttle valves.

LER 50-338/91-001-00 for Unit 1 documents the total flow rate for a HHSI pump in excess of the maximum allowable flow rate for the pump during HHSI flow balance testing.

8.0 Additional Information

The "as-found" branch line flows for the SI hot leg branch lines were acceptable.

North Anna Unit 1 was in mode 1 throughout this event and was not affected.