10CFR50.73

Virginia Electric and Power Company
North Anna Power Station
P. O. Box 402
Mineral, Virginia 23117

October 11, 2002

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D. C. 20555-0001

Serial No.: 02-567
NAPS: MPW
Docket No.: 50-338, 339
License No.: NPF-4, 7

Dear Sirs:

Pursuant to 10CFR50.73, Virginia Electric and Power Company hereby submits the following Licensee Event Report applicable to North Anna Power Station Units 1 and 2.

Report No. 50-338, 339/2002-002-00

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

Very truly yours,

D. A. Heacock, Site Vice President
North Anna Power Station

Enclosure

Commitments contained in this letter: None

cc: United States Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23 T85
Atlanta, Georgia 30303-8931

Mr. M. J. Morgan
NRC Senior Resident Inspector
North Anna Power Station

IE22

NRC FORM 366 (7-2001) U.S NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 **EXPIRES 7-31-2004**

Estimated burden per response to comply with this mandatory information collection request 50 hours Reported lessons learned are incorporated into the licensing process and fed back to industry Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U S Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503 If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
NORTH ANNA POWER STATION , UNIT 1	05000 - 338	1 OF 5

TITLE (4)
Incorrect Low Temperature Overpressure Protection Setpoints Due To Inadequate Procedures

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	DOCUMENT NUMBER
08	16	2002	2002	-- 002 --	00	10	11	2002	North Anna Power Station, Unit 2	05000-339
									FACILITY NAME	DOCUMENT NUMBER 05000-

OPERATING MODE (9)	1	**THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:** (Check all that apply) **(11)**			
POWER LEVEL (10)	100 %	20 2201(b)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
		20.2201(d)	20 2203(a)(4)	50.73(a)(2)(iii)	50.73(a)(2)(x)
		20.2203(a)(1)	50.36(c)(1)(i)(A)	50.73(a)(2)(iv)(A)	73.71(a)(4)
		20.2203(a)(2)(i)	50.36(c)(1)(ii)(A)	50.73(a)(2)(v)(A)	73.71(a)(5)
		20.2203(a)(2)(ii)	50.36(c)(2)	50.73(a)(2)(v)(B)	OTHER
		20.2203(a)(2)(iii)	50.46(a)(3)(ii)	50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
		20.2203(a)(2)(iv)	50.73(a)(2)(i)(A)	50.73(a)(2)(v)(D)	
		20.2203(a)(2)(v)	X 50.73(a)(2)(i)(B)	50.73(a)(2)(vii)	
		20.2203(a)(2)(vi)	50.73(a)(2)(i)(C)	50.73(a)(2)(viii)(A)	
		20.2203(a)(3)(i)	50.73(a)(2)(ii)(A)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
D. A. Heacock, Site Vice President	(540) 894-2101

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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 15 single-spaced typewritten lines) **(16)**

On August 16, 2002, at 1000 hours, with Units 1 and 2 in Mode 1 operating at 100% power, it was identified that the Low Temperature Overpressure Protection System (LTOPS) setpoints for the Pressurizer Power Operated Relief Valves (PORV) may have exceeded the Technical Specification (TS) limits. On August 30, 2002, a review of completed Unit 1 and 2 calibration procedures from the previous three years identified six occasions where the temperature enable or pressure lift settings for the PORVs were outside of the TS limits by a very small margin. This event is being reported as a condition prohibited by TS in accordance with 10CFR50.73(a)(2)(i)(B). The cause of the event is attributed to personnel error that resulted in the establishment of procedures where non-conservative application of allowed tolerance to the setpoint resulted in not satisfying TS requirements. No significant safety consequences resulted from this event because the PORVs would have lifted within the limits established by the Safety Analysis Limits for the system. The health and safety of the public were not affected at any time during this event.

1.0 DESCRIPTION OF THE EVENT

On August 16, 2002 during a review supporting Improved Technical Specification (ITS) implementation, it was discovered that the procedure tolerance band for the Low Temperature Overpressure Protection System (LTOPS) setpoints could result in a noncompliance with the TS limit. Specifically, the review of Licensee Event Report 50-338, 50-339/2002-001-00 regarding an incorrect alarm setpoint for the Waste Gas Decay Tank (WGDT) Oxygen Analyzer (EIIS System WE, Component AA) prompted a review of the design and licensing basis regarding procedure tolerance bands. This review identified the LTOPS pressure and temperature concern.

Prior to ITS implementation, on August 20, 2002, the Unit 1 and 2 Technical Specifications (TS) 3.4.9.3 for the LTOP System required two Pressurizer Power Operated Relief Valves (PORV) (EIIS System AB, Component RV) to be operable with lift settings of (a) ≤ 500 psig (Unit 1), ≤ 415 psig (Unit 2) whenever any RCS cold leg temperature is ≤ 235 degrees F (Unit 1), ≤ 270 degrees F (Unit 2) and (b) ≤ 395 psig (Unit 1), ≤ 375 psig (Unit 2) whenever any RCS cold leg temperature is ≤ 150 degrees F (Unit 1), ≤ 130 degrees F (Unit 2). This was applicable in MODE 4 when the temperature of any Reactor Coolant System (RCS) cold leg is ≤ 235 degrees F (Unit 1), ≤ 270 degrees F (Unit 2), and in MODE 5 and MODE 6 when the head is on the reactor vessel and the RCS is not vented through a 2.07 square inch or larger vent. Current ITS requirements are worded slightly different, but the overall requirements are unchanged.

An example of the instrument calibration procedure (ICP) scaling for pressure and temperature for the LTOPS setpoints is described below. For an ICP setpoint of 500 psig, the scaling for the pressure instrument comparator is 0 - 3000 psig which is equivalent to 0 - 10 VDC, 500 / 3000 psig (rounded to 0.1667 times 10 VDC equals an ICP setpoint of 1.667 VDC; 0.1667 times 3000 psig equals a TS trip point of 500.1 psig). For an ICP setpoint of 235 degrees F, the scaling for the RCS Wide Range Temperature is 0 - 700 degrees F which is equivalent to 0 - 10 VDC, 235 / 700 degrees F (rounded to 0.3357 times 10 VDC equals an ICP setpoint of 3.357 VDC; 0.3357 times 700 degrees F equals a TS trip setpoint of 234.99 degrees F). The standard tolerance applied to Westinghouse comparators at North Anna is +/- 25 mVDC. This allows the technicians to leave the actual setpoint in non-compliance with TS.

On August 30, 2002, the review of completed instrument calibration procedures for the last three years, on Units 1 and 2, identified six occasions where the pressure or temperature settings were outside the TS limits. This could have prevented the PORVs from lifting at the TS limit. However, in each case the PORVs would have lifted at a pressure and temperature within the Safety Analysis Limit. Although the TS limit was exceeded, the PORVS would have performed their design function. A summary of the out of specification setting is provided below.

Pressure lift settings were identified out of specification as follows:

Unit	PORV	TS Trip Point	ICP As-Found Setpoint	ICP As-Left Setpoint	Actual	Date
1	1455C	≤500 psig	1.667 VDC	1.668 VDC	500.4 psig	08/23/01
1	1455C	≤500 psig	1.667 VDC	1.669 VDC	500.7 psig	01/07/00

Temperature enable settings were identified out of specification as follows:

Unit	PORV	TS Trip Point	ICP As-Found Setpoint	ICP As-Left Setpoint	Actual	Date
2	2456	≥270°F	3.857 VDC	3.856 VDC	269.92	09/17/99
2	2455C	≥270°F	3.857 VDC	3.853 VDC	269.71	09/30/99
1	1455C	≥150°F	2.143 VDC	2.140 VDC	149.80	01/07/00
1	1455C	≥150°F	2.143 VDC	2.140 VDC	149.80	08/23/01

Therefore, this event is being reported as a condition prohibited by TS in accordance with 10CFR50.73(a)(2)(i)(B).

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The LTOP System controls RCS pressure at low temperatures so the integrity of the reactor coolant pressure boundary is not compromised by violating the LTOP System design basis pressure and temperature limit curve. As designed for the LTOP System, each PORV is signaled to open if RCS pressure exceeds a limit determined by the LTOP actuation logic. The LTOPS actuation logic monitors both RCS pressure and temperature and determines when a condition is not acceptable. The wide range RCS temperature indications are auctioneered to select the lowest temperature signal. The lowest temperature signal is passed to a comparator circuit, which determines the pressure limit for that temperature. The pressure limit is then compared with the indicated RCS pressure from a wide range pressure channel. If the indicated pressure meets or exceeds the calculated value, the PORVs are signaled to open (on a staggered basis).

The Safety Analysis Limit (SAL) for the enabling temperature is 219.8 degrees F (Unit 1) and 254.3 degrees F (Unit 2). The margins between the Technical Specification allowable values for LTOPS temperature enable and the Safety Analysis Limit equals 15.2 degrees F (Unit 1) and 15.7 degrees F (Unit 2). This margin is greater than the currently applicable channel statistical accuracy of 13.5 degrees F. Available margin for Unit 1 is 15.2 degrees F minus 13.5 degrees F equals 1.7 degrees F. Available margin for Unit 2 is 2.2 degrees F. Thus, Unit 1 can accommodate a non-conservative LTOPS temperature enable by as much as 1.7 degrees F, while Unit 2 can accommodate a non-

conservative LTOPS temperature enable by as much as 2.2 degrees F, while still meeting the requirements of the safety analysis. The actual temperature enable settings were within the SAL limits.

The Safety Analysis Limit (SAL) for the pressure lift setting is 560.54 psig (Unit 1) and 499.60 psig (Unit 2). PORV pressure lift settings, taking into account the TS allowed value plus instrument uncertainty, were calculated to be 553.5 psig (Unit 1) and 468.5 psig (Unit 2). The margins between the Safety Analysis Limit and actual PORV pressure lift settings equal 7.04 psig (Unit 1) and 31.1 psig (Unit 2). Thus, Unit 1 can accommodate a non-conservative PORV pressure lift setting of 7.04 psig, and Unit 2 can accommodate a non-conservative PORV lift setting of 31.1 psig while still meeting the requirements of the safety analysis. The actual PORV pressure lift settings were within the SAL limits.

The PORVs for both units were able to perform their design function. Therefore, the health and safety of the public were not affected by this event.

3.0 CAUSE

The cause of the event is attributed to personnel error that resulted in calibration procedures with tolerance limits so close to the TS requirements for pressure and temperature settings that a very small variance would cause the TS limits to be exceeded. The development of the calibration procedures were based on the channel statistical analysis and the safety analysis limits for this system without ensuring the TS limits would never be exceeded.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

An information action statement was entered on August 16, 2002, to recalibrate the instrument loops prior to entry in to MODE 4.

5.0 ADDITIONAL CORRECTIVE ACTIONS

Procedure revisions were initiated and subsequently completed providing temperature enable settings and pressure lift settings that would prevent exceeding the TS limits.

The corrected Unit 2 LTOP temperature enable and pressure settings were installed for both PORVs on September 4, 2002. The corrected Unit 1 LTOPS temperature enable and pressure lift settings were installed for both PORVs on September 5, 2002.

6.0 ACTIONS TO PREVENT RECURRENCE

No further actions are required.

7.0 SIMILAR EVENTS

LER N1/2-02-001-00 was written for a similar concern where the procedure tolerance band for the alarm setpoint for the Waste Gas Decay Tank Oxygen Analyzer may allow the tank oxygen to exceed the limit.

8.0 MANUFACTURER/MODEL NUMBER

Not Applicable

9.0 ADDITIONAL INFORMATION

None