

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

June 5, 2003

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

**Serial No.: 03-344
NAPS: MPW
Docket No.: 50-338
License No.: NPF-4**

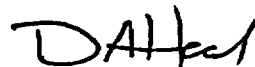
Dear Sirs:

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

Report No. 50-338/2003-002-00

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

LICENSEE EVENT REPORT (LER)

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

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.

FACILITY NAME (1) NORTH ANNA POWER STATION, UNIT 1	DOCKET NUMBER (2) 05000 - 338	PAGE (3) 1 OF 4
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TITLE (4) Entered Mode 4 with an Inoperable Containment Air Lock Due to Human Error

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
04	13	2003	2003	- 002 -	00	06	05	2003	FACILITY NAME	DOCUMENT NUMBER 05000-

OPERATING MODE (9) 4	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)											
POWER LEVEL (10) 0 %	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 D. A. Heacock, Site Vice President							TELEPHONE NUMBER (Include Area Code) (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)
<p>On April 13, 2003, at 1114 hours Unit 1 entered Mode 4 with an inoperable containment personnel air lock. Containment leakage testing was performed as part of the unit start-up activities following a refueling outage. The total containment personnel air lock leakage was identified at 22 standard cubic feet per hour (scfh) with a test procedure limit of ≤ 12.9 scfh. Technical Specification (TS) limit is $\leq .05 L_a$, which equates to ≤ 15.22 scfh. The personnel air lock leakage of 22 scfh was factored into the total containment leakage. The total maximum containment leakage rate was then calculated at 42.32 scfh well below the acceptance criteria of ≤ 182.6 scfh. The requirements of Technical Specifications (TS) were not properly verified resulting in an incorrect assumption that the specified periodic test procedure acceptance leakage limits for the containment personnel air lock were administrative. As such, a condition prohibited by TS occurred and this event is reportable in accordance with 10CFR50.73(a)(2)(i)(B). The health and safety of the public were not affected at any time during this event.</p>

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NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

1.0 DESCRIPTION OF THE EVENT

On April 13, 2003, at 0300 hours with Unit 1 in Mode 5, containment personnel air lock (EIS System - NH, Component - AL) leakage testing was being performed as part of the start-up activities following a refueling outage. The total flow rate for the containment personnel air lock was measured at 22 standard cubic feet per hour (scfh). The periodic test procedure has a limit of ≤ 12.9 scfh with a Technical Specification (TS) limit of $\leq .05 L_a$, which equates to ≤ 15.22 scfh. Attempts were made to locate the leakage on the personnel air lock outer door and none were found. Attempts were then made to locate the leakage on the personnel air lock inner door without success since the containment was under vacuum. The measured value of 22 scfh was subsequently factored in to the total containment local leakage rate and the total maximum path leakage rate. A decision was made to continue with unit start-up activities since the total maximum leakage rate was calculated at 42.319 scfh well below the TS acceptance criteria of ≤ 182.6 scfh.

The Technical Specification (TS) require two containment airlocks (i.e., equipment airlock and personnel airlock) be operable in Modes 1 through 4. Both the inner and outer air lock doors must be operable for the airlock to be operable. The TS LCO 3.6.2 surveillance requirement delineates air lock leakage rate testing in accordance with the "Containment Leakage Rate Testing Program". The acceptance limits of the program, $\leq .05 L_a$ which equates to ≤ 15.22 scfh, are delineated in the TS Administrative Controls Section 5.5, Programs and Manuals. While evaluating the test results and TS requirements, the specific criteria for containment personnel air lock leakage was overlooked. The requirements of TS were not properly verified resulting in an incorrect assumption that the overall containment leakage value (total maximum path leakage) was the limit.

On April 13, 2003, at 1114 hours Unit 1 entered Mode 4 with an inoperable containment personnel air lock. This event is reportable in accordance with 10CFR50.73(a)(2)(i)(B) for a condition prohibited by TS.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

No significant safety consequences resulted from this event since containment was operating under vacuum and no leakage escaped to the atmosphere. The total maximum leakage rate was calculated to be 42.319 scfh well below the acceptance criteria of ≤ 182.6 scfh. The TS allow for continued operation indefinitely as long as an operable air lock door is: a) verified closed within one hour, b) locked within twenty four hours, and c) verified locked closed once every thirty one days.

Appendix J to 10 CFR 50, Primary Reactor Containment Leakage Testing for Water Cooled Power Reactors, does not delineate specific acceptance criteria limits for containment air locks but rather containment leakage as a whole. The design limit of

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allowable containment leakage during an accident is called L_a based on 0.1 percent of containment volume leakage per day. To allow margin for meeting the L_a limit, a fraction of that limit, $\leq 0.6 L_a$ is used as the limit of the total local leak rate. As left maximum path measured leakage must be $\leq 0.6 L_a$ prior to entering a mode requiring containment integrity.

Since containment penetrations have double barriers, leakage is tracked in three categories: a) As Left Maximum Path Leakage, b) As Left Minimum Path Leakage, and c) As Found Minimum Path Leakage. Maximum path leakage is the larger leak rate of two valves in series and minimum path leakage is the smaller leak rate of two valves in series. Each of the three categories must be $\leq 0.6 L_a$ and are applicable during different conditions such as start-up, refueling outages and operating. A running total is modified based on the measurement of new leakage sources and elimination of existing leaks by repair. The unit L_a is ≤ 304.4 scfh and the $\leq 0.6 L_a$ is ≤ 182.6 scfh. The measured total local leak rate including instrument error for the Unit 1 containment was:

As Left Maximum Path Leakage	42.319 scfh
As Left Minimum Path Leakage	19.023 scfh
As Found Minimum Path Leakage	17.406 scfh

The calculated Total Maximum Path Leakage of 42.319 scfh is well below the acceptance criteria of ≤ 182.6 scfh and as such, there were no 10 CFR 50 Appendix J mode holds.

3.0 CAUSE

The apparent cause is attributed to human error. The TS LCO 3.6.2 surveillance requirement delineates air lock leakage rate testing in accordance with the "Containment Leakage Rate Testing Program". The acceptance limits of the program are delineated in the TS Administrative Controls Section 5.5, Programs and Manuals. The requirements of TS were not properly verified resulting in an incorrect assumption that the containment personnel air lock leakage numbers specified in the periodic test procedure were administrative limits.

4.0 IMMEDIATE CORRECTIVE ACTION(S)

Upon discovery of the condition prohibited by TS a station deviation report was initiated. At the time of discovery Unit 1 had already been placed in Mode 5 as a result of reactor coolant leakage from the number 4 core exit thermocouple nozzle assembly.

5.0 ADDITIONAL CORRECTIVE ACTIONS

Repairs were made to the containment personnel air lock inner door. Subsequent leakage rate testing was performed with satisfactory results.

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6.0 ACTIONS TO PREVENT RECURRENCE

The periodic test procedures for containment personnel air lock leakage and total containment leakage testing are being revised to specifically reference TS Section 5.5 including a clarification that the limits for the containment personnel air lock are required by the TS and not an administrative limit.

7.0 SIMILAR EVENTS

None

8.0 ADDITIONAL INFORMATION

Unit 2 was not affected by this event. A review of Unit 2 containment personnel air lock leakage test results from the February 2003 start-up indicated 5.5 scfh.