

10CFR50.73

**Virginia Electric And Power Company
Surry Power Station
5570 Hog Island Road
Surry, Virginia 23883**

September 15, 2000

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

Serial No.: 00-475
SPS: JSA/BAG
Docket No.: 50-280
50-281
License No.: DPR-32
DPR-37

Dear Sirs:

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

Report No. 50-280, 50-281/2000-002-00

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,



E. S. Grecheck
Site Vice President

Enclosure

JE22

Commitments contained in this letter:

1. A category 2 root cause evaluation (RCE) has been initiated for this event. Upon completion, the approved recommendations from the RCE will be implemented through the corrective action program.

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

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

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 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an 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) SURRY POWER STATION , Unit 1		DOCKET NUMBER (2) 05000 - 280	PAGE (3) 1 OF 4
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TITLE (4)
Effect Of Ventilation Fans On Control Room Boundary Results In TS Violation

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
06	29	00	2000	-- 002 --	00	09	15	00	Surry Unit 2	05000-281
									FACILITY NAME	DOCUMENT NUMBER
										05000-

OPERATING MODE (9) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
	20.2201(b)		20.2203(a)(2)(v)		<input checked="" type="checkbox"/>	50.73(a)(2)(i)		50.73(a)(2)(viii)		
POWER LEVEL (10) 100 %	20.2203(a)(1)		20.2203(a)(3)(i)			50.73(a)(2)(ii)		50.73(a)(2)(x)		
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)			50.73(a)(2)(iii)		73.71		
20.2203(a)(2)(ii)		20.2203(a)(4)			50.73(a)(2)(iv)		OTHER			
20.2203(a)(2)(iii)		50.36(c)(1)			50.73(a)(2)(v)		Specify in Abstract below			
20.2203(a)(2)(iv)		50.36(c)(2)			50.73(a)(2)(vii)		or in NRC Form 366A			

LICENSEE CONTACT FOR THIS LER (12)	
NAME E. S. Grecheck, Site Vice President	TELEPHONE NUMBER (Include Area Code) (757) 365-2001

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		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)
 On June 29, 2000, Units 1 and 2 were operating at 100% reactor power. While conducting a test of the Control Room Pressure Envelope (CRPE), newly installed differential pressure (DP) indicators between the CRPE and the Unit 1/2 Cable Tunnel/Vaults did not meet the acceptance criteria of Technical Specification (TS) 3.19.A. An 8 hour TS 3.19.B Limiting Condition for Operation (LCO) was entered.

Corrective actions were taken to eliminate localized low pressure areas within the envelope where the new indicators were installed. In addition, fans adjacent to the CRPE were secured to eliminate any influence that they may have had on the CRPE. Following these actions, a bottled dry air bank was discharged and the test was performed again. The test results met the acceptance criteria and the 8-hour LCO was exited. A root cause evaluation (RCE) was initiated. On August 17, 2000, after an Engineering evaluation of the test results, it was determined that the conditions found during the event were pre-existing and the event was reportable pursuant to 10CFR50.73(a)(2)(i)(B) for a condition prohibited by TSs. The most probable cause is the design of the return air flowpath for the MCR air handling units. Upon completion of the RCE approved corrective actions will be implemented. This event resulted in no safety consequences and the health and safety of the public was not affected.

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		2000	--002 --	00	

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

1.0 DESCRIPTION OF THE EVENT

Technical Specifications (TSs) require that a bottled dry air bank [IEEE: LH-GBM] be available under accident conditions to maintain the Control Room Pressure Envelope (CRPE) at a positive differential pressure (DP) (0.05 inches of water) with respect to adjoining areas of the auxiliary, turbine, and service buildings for one hour. The CRPE includes the Main Control Room (MCR), adjacent computer rooms, and Air Handling Rooms (AHRs). Adjacent spaces include the Turbine Building (TB), cable vaults and cable vault tunnels. TS 4.1 requires the capability to pressurize the CRPE be demonstrated by using a flow rate of air equivalent to or less than the flow rate delivered by the bottled air supply. Station procedure 0-OPT-VS-005, "Control Room Leakage Test," provides instructions to perform this surveillance by using a supply fan [IEEE: MF-FAN] with a restrictive orifice to supply approximately 300 cubic feet per minute (cfm) to the CRPE. The expected bottle capacity is a minimum of 500 cfm per train. The station has two bottled air supply trains installed.

Based on corrective actions described in LER S1-99-004-01, plant modifications were implemented. One of the modifications included permanently installing additional DP indicators [IEEE: NA-PI] to monitor the DP across additional areas of the CRPE not previously monitored. Two of these gauges monitor DP in the vicinity of the Unit 1 Computer Room relative to the Unit 1 Cable Vault and the Unit 2 AHR relative to the Unit 2 Cable Vault.

On June 29, 2000, during the performance of periodic test 0-OPT-VS-005, the two newly installed DP indicators described above read below the minimum TS required positive pressure differential of 0.05 inches of water with the indicator in the Unit 2 AHR reading the lowest. This initial reading was taken with the doors to the AHRs, adjacent to the MCR, closed and adjacent area fans secured, except the Turbine Building ventilation fans [IEEE: MF-AHU]. An eight-hour limiting condition for operation (LCO) clock to hot shut down was entered for both units on June 29, 2000 at 1119 hours. Based on the indications that the Air Handlers were creating localized low pressure zones in the AHRs, appropriate doors within the CRPE were opened to equalize pressure. In addition, the TB fans were secured to minimize any influence they would have on the CRPE. The test was re-performed by using an actual bottle air bank discharge and with the increased flow from the bottled air, the CRPE satisfied the required TS DP limit. The eight-hour LCO was exited at 1755 hours.

Based on the initial review of the June 29, 2000 event, the condition was considered to have occurred at the time of the test and therefore, no reporting criteria were applicable. However, after Engineering evaluated the multiple corrective actions taken during the test and their influence on the CRPE, it was determined on August 17, 2000, that with the doors closed between the AHRs and the MCR, which was a pre-existing condition, the control room bottled air system would not have been able to maintain positive differential

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pressure across the CRPE at these locations. Therefore, this event is reportable pursuant to 10CFR50.73(a)(2)(i)(B) for a condition prohibited by TS.

2.0 SIGNIFICANT SAFETY CONSEQUENCES AND IMPLICATIONS

The CRPE is designed to be maintained at a positive DP using bottled air during the period following a DBA when containment pressure would be greater than atmospheric pressure and a release could occur. During accident conditions, positive pressure in the CRPE limits contamination and personnel dose during the period of potential containment leakage.

During a DBA, contaminants are assumed to travel from containment through a failed penetration and therefore could enter the cable vault. Recent modifications were implemented to secure the cable vault ventilation if a DBA occurs, which would slow the transport of the radioactive material. CRPE penetration seals prevent the transport of contamination into the CRPE. Failure of these penetration seals would need to occur for this condition to have an impact on the CRPE.

Since there have been no events that challenged the CRPE and the conditions from this event would not have changed the calculated doses from offsite releases resulting from a DBA, this event did not result in any safety consequences and the health and safety of the public was not affected.

3.0 CAUSE

The most probable cause for the failure to maintain the required DP is the design of the air return flowpath for the air handling units in the AHRs. The units recirculate, filter, and provide cooling to the air in the MCR. Inlet air to the air handling units is drawn from the AHRs. With the doors to the rooms closed, air is drawn into the rooms from a small duct between the MCR and the AHRs, creating localized lower pressure areas in the AHRs.

In addition, the configuration of the non-safety-related Turbine Building fans contributed, to a minor extent, to the lower control room pressure. The closure of TB track bay doors because of weather conditions caused a flow imbalance creating a lower pressure that affected the CRPE. Minor penetration leakage between the TB and the CRPE resulted in a lower initial absolute pressure in the CRPE.

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4.0 IMMEDIATE CORRECTIVE ACTION(S)

On June 29, 2000, the Unit 1 and 2 AHR doors were opened to eliminate the negative pressure in the rooms. Appropriate limiting conditions for operation were entered and exited as required.

Also, when it was determined that the TB ventilation configuration was influencing the CRPE, the configuration was adjusted and administrative controls were maintained until the design change to trip the fans was implemented.

5.0 ADDITIONAL CORRECTIVE ACTIONS

Unit 1 and 2 AHR doors were removed to eliminate the negative pressure in the rooms.

6.0 ACTIONS TO PREVENT RECURRENCE

A Design Change has been implemented to trip all TB fans during accident conditions that require the MCR to isolate.

A RCE has been initiated and, upon completion, the approved recommendations from the RCE will be implemented through the corrective action program.

7.0 SIMILAR EVENTS

The previous event listed below was similar to this event in that existing non-safety related fans were influencing the positive pressure requirements of the MCR. The previous event, however, did not involve the TB ventilation fans or AHR doors.

LER 50-280, 50-281/1999-004-01
TS Violation Due to Non-Safety Related Fans Effect On Control Room Boundary

8.0 MANUFACTURER/MODEL NUMBER

N/A

9.0 ADDITIONAL INFORMATION

None