

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) North Anna Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 3 8	PAGE (3) 1 OF 0 3
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TITLE (4)  
Fire Suppression Water Supply Inoperable

EVENT DATE (8)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
09	11	84	84	009	00	10	11	84	North Anna Unit 2		0 5 0 0 0 3 3 9

OPERATING MODE (8)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 1 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(a)	<input type="checkbox"/> 80.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)						
	<input type="checkbox"/> 20.406(a)(1)(i)	<input type="checkbox"/> 80.38(a)(1)	<input type="checkbox"/> 80.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)						
	<input type="checkbox"/> 20.406(a)(1)(ii)	<input type="checkbox"/> 80.38(a)(2)	<input type="checkbox"/> 80.73(a)(2)(vi)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	<input type="checkbox"/> 20.406(a)(1)(iii)	<input type="checkbox"/> 80.73(a)(2)(i)	<input type="checkbox"/> 80.73(a)(2)(vii)(A)							
	<input type="checkbox"/> 20.406(a)(1)(iv)	<input type="checkbox"/> 80.73(a)(2)(ii)	<input type="checkbox"/> 80.73(a)(2)(viii)(B)							
	<input type="checkbox"/> 20.406(a)(1)(v)	<input type="checkbox"/> 80.73(a)(2)(iii)	<input type="checkbox"/> 80.73(a)(2)(ix)							

LICENSEE CONTACT FOR THIS LER (12)									
NAME E. Wayne Harrell							TELEPHONE NUMBER AREA CODE: 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	K P	I S V	P 3 4	No						
X	K P	P	P 1 1 5	No						

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH: 1 0 3 DAY: 1 8 YEAR: 4
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT

On September 4, 1984, with Unit 1 in Mode 5 and Unit 2 in Mode 6, the Motor Driven Fire Pump was removed from service due to a low discharge pressure. The pump had been running for approximately two hours when this condition was discovered. A subsequent inspection of the pump revealed symptoms of pump runout. It was later discovered that the disk of the isolation butterfly valve for the twelve inch recirculation line had failed resulting in runout of the Motor Driven Fire Pump.

The recirculation line isolation valve was replaced and the Motor Driven Fire Pump will be returned to service following re-assembly and testing. With the Motor Driven Fire Pump out of service, the redundant Diesel Driven Fire Pump at the Service Water Reservoir has remained operable to supply the Fire Suppression Water System. Additional water sources, via the Warehouse No. 5 Diesel and Electric Fire Pumps, are available to the Fire Suppression Water System, if required. Therefore, the health and safety of the public are not affected.

Since the Motor Driven Fire Pump was not returned to service by September 11, 1984, this event is reportable as a Special Report pursuant to Unit 1 T.S. 6.9.2.1 and Unit 2 T.S. 6.9.2.1.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		0	0	9	0	2 OF 0 3

TEXT (If more space is required, use additional NRC Form 388A's) (17)

On September 4, 1984, at 0442, with Unit 1 in Mode 5 and Unit 2 in Mode 6, both the Motor and Diesel Driven Fire Pumps (EISS identifier P) auto-started from low Fire Loop pressure. The Warehouse No. 5 (construction side) Fire Pumps (EISS identifier P), which were cross connected to the Fire Loop also started but were secured at 0501. At that time, the Fire Loop pressure was approximately 35 psig. The Fire Loop is normally maintained at 100 psig. At 0620, the construction side fire system was isolated from the Fire Loop. At 0625, the Diesel Driven Fire Pump at the Service Water Reservoir (EISS identifier RVR) was secured and the discharge pressure of the Motor Driven Fire Pump at the Circulating Water Intake Structure (EISS system identifier NN) screenwell was observed to be 5 psig. Due to this abnormally low discharge pressure, the Motor Driven Fire Pump was isolated from the Fire Loop and secured at 0643, the Diesel Driven Fire Pump was started and the Fire Loop pressure then increased to greater than 100 psig. The Fire Suppression Water System (EISS system identifier KP) valve lineup was restored to normal by 0748 with the exception of the Motor Driven Fire Pump which remained isolated. During the event, Control Room personnel also observed a decrease in the Service Water Reservoir level of approximately one and one-half inches corresponding to about 367,000 gallons of molybdate treated service water. At 0930, the Motor Driven Fire Pump was started for testing/trouble shooting but could not attain a discharge pressure greater than 5 psig and was subsequently shutdown pending maintenance.

The Motor Driven Fire Pump is a three stage vertical turbine pump, bowl size 16HxB manufactured by FMC Corporation, Peerless Pump Division. An inspection of the Motor Driven Fire Pump revealed symptoms of a sustained runout condition as it appeared that two of its three impellers had made contact with the tops of their respective bowls. The pump was re-assembled and tested on September 25, 1984, but again did not develop significant discharge pressure. The pump was disassembled for the second time but no cause for the lack of discharge pressure was evident. Concurrent with this second inspection, an investigation by Engineering and Maintenance personnel disclosed that the disk of the butterfly valve (EISS identifier ISV) providing isolation of the twelve inch pump recirculation line had failed and was missing. The failure of the isolation valve resulted in the initial Fire Loop low pressure which initiated the event on September 4, 1984 and accounted for the low pump discharge pressure and decrease in Service Water Reservoir level. No sprinkler actuations, manual actuations or line leaks were found other than the failed butterfly valve which accounted for the September 4, 1984 event.

The isolation valve is a 12 inch carbon steel, butterfly valve, Part No. 1633009, manufactured by Henry Pratt, Inc. The disk failure was most likely caused by corrosion. The valve is installed in the recirculation piping for the Motor Driven Fire Pump and discharges back to the Intake Structure screenwell. Except during annual full flow testing of the fire pump, the isolation valve is normally closed and continuously under system pressure. During the event, runout of the Motor Driven Fire Pump occurred as it was discharging through the recirculation line. This accounted for the indications of impeller lifting noted when the pump was initially inspected and also for the low pump discharge pressure.

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		YEAR	SEQUENTIAL NUMBER	PARTITION NUMBER			
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TEXT (If more space is required, use additional NRC Form 388A's) (17)

The Motor Driven Fire Pump will be returned to service following re-assembly and testing. The failed isolation valve has been replaced with an identical valve which was providing isolation to a test manifold (EIIIS identifier HYD) not normally utilized. The test manifold will be isolated via a blank flange until a replacement valve can be obtained.

A similar disc failure occurred approximately two years ago. However, that failure had no significant consequences. Since this is the second failure of a butterfly valve disc in the Fire Suppression Water System, an Engineering evaluation of the suitability of the butterfly valves for this application will be conducted. This will include an assessment of similar valves installed in other potentially corrosive systems as well. An evaluation is also underway to determine the environmental impact from discharging the molybdate treated Service Water into the North Anna Reservoir.

With the Motor Driven Fire Pump out of service, the redundant Diesel Driven Fire Pump has remained operable to supply the Fire Suppression Water System. Additional water sources, via the Warehouse No. 5 Diesel and Electric Fire Pumps, are available to supply the Fire Suppression Water System, if required. Therefore the safety and health of the public are not affected.

Since the Motor Driven Fire Pump was not returned to service within the 7 days allowed by the Action Statement of T.S. 3.7.14.1, it is reportable as a Special Report pursuant to Unit 1 T.S. 6.9.2.1 and Unit 2 T.S. 6.9.2.1.

# Vepco

VIRGINIA ELECTRIC AND POWER COMPANY

NORTH ANNA POWER STATION

P. O. BOX 402

MINERAL, VIRGINIA 23117

October 11, 1984

U. S. Nuclear Regulatory Commission  
Document Control Desk  
016 Phillips Building  
Washington, D.C. 20555

Serial No. N-84-018  
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Docket No. 50-338  
License No. NPF-4

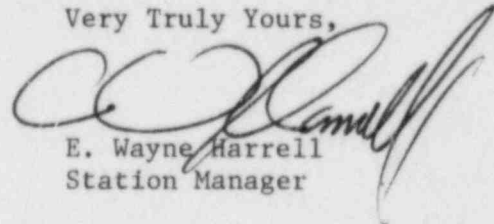
Dear Sirs:

The Virginia Electric and Power Company hereby submits the following License Event Report applicable to North Anna Unit No. 1.

Report No. LER 84-009-00

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,



E. Wayne Harrell  
Station Manager

Enclosures (3 copies)

cc: Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, Suite 2900  
Atlanta, Georgia 30303

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