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 KANSLER, M.R. Virginia Power (Virginia Electric & Power Co.)
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-005-01: on 890908, unplanned ESF component actuation
 closure of condenser waterbox circulating water IV A & C.
w/8 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
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VIRGINIA ELECTRIC AND POWER COMPANY

Surry Power Station
P.O. Box 315
Surry, Virginia 23883

October 16, 1989

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

Serial No.: 89-042A
Docket Nos.: 50-281
License Nos.: DPR-37

Gentlemen:

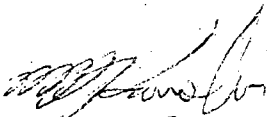
Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report for Unit 2.

REPORT NUMBER

89-005-01

This report supersedes our letter dated October 6, 1989 (Serial No. 89-042) as the report number provided in the cover letter was incorrect. Certain typographical errors were also corrected. This report has been reviewed by the Station Nuclear Safety and Operating Committee and will be reviewed by Safety Evaluation and Control.

Very truly yours,



M. K. Kansler
Station Manager

Enclosure

cc: Regional Administrator
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

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) Surry Power Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 8 1	PAGE (3) 1 OF 0 4
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TITLE (4) Unplanned ESF Component Actuation Closure of "A" and "C" Condenser Waterbox Circulating Water Inlet Valves

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 NAMES		DOCKET NUMBER(S)
09	08	89	89	005	01	01	06	89			0 5 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

OPERATING MODE (8) N	20.402(b)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)
	20.405(a)(1)(i)	<input type="checkbox"/>	50.73(a)(2)(v)	<input type="checkbox"/>	73.71(c)
	20.405(a)(1)(ii)	<input type="checkbox"/>	50.73(a)(2)(vii)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	20.405(a)(1)(iii)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)	<input type="checkbox"/>	
	20.405(a)(1)(iv)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)	<input type="checkbox"/>	
	20.405(a)(1)(v)	<input type="checkbox"/>	50.73(a)(2)(ix)	<input type="checkbox"/>	

LICENSEE CONTACT FOR THIS LER (12)

NAME M. R. Kansler, Station Manager	TELEPHONE NUMBER AREA CODE 8 0 4 3 5 7 - 3 1 8 4
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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

SUPPLEMENTAL REPORT EXPECTED (14)

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

On September 8, 1989 at 2142 hours, with Unit 2 in cold shutdown, during performance of a periodic test on the turbine building flood control circuitry, two of the four condenser waterbox Circulating Water (CW) inlet isolation valves closed unexpectedly. The condenser inlet valves are designed to close upon the initiation of a hi hi Consequence Limiting Safeguards (CLS) signal in coincidence with a loss of off site power; however, no actual hi hi CLS signal was present. The event is being reported as an unplanned Engineered Safety Features (ESF) component actuation. A four hour non-emergency report was made to the Nuclear Regulatory Commission per 10CFR50.72. The event was caused by a relay in the flood control circuit that did not drop out as required during testing which resulted in actuation of the valves. It was determined that the original relay had been replaced with a new relay which required less hold-in current causing this event to occur. An investigation will be conducted to determine how the new relays were installed.

**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) Surry Power Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 2 8 1	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 9	- 0 0 5	- 0 1	0 2	OF 0 4

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

1.0 Description of the Event

On September 8, 1989 at 2142 hours, with Unit 2 in cold shutdown, during performance of a periodic test on the turbine building flood control circuitry, the "A" and "C" condenser waterbox Circulating Water (CW) (EIIS-RT) inlet isolation valves (MOV-CW-206 A & C) (EIIS-COND) closed unexpectedly. The condenser inlet valves are also designed to close upon the initiation of a hi hi Consequence Limiting Safeguards (CLS) signal in coincidence with a loss of off site power. However, no actual hi hi CLS signal was present. The event is being reported as an unplanned Engineered Safety Features (ESF) (EIIS-JE) component actuation. A four hour non-emergency report was made to the Nuclear Regulatory Commission per 10CFR50.72.

2.0 Safety Consequences and Implications

The condenser CW inlet valves are designed to close upon a hi hi CLS signal in coincidence with loss of off site power or upon a low intake canal level to ensure sufficient water is maintained in the canal to provide a heat sink during certain accident conditions. The valves also close in the event of turbine building flooding to isolate a potential source of water.

During this event, no actual condition existed that required the valves to be closed, and the valves operated as designed. Therefore, the health and safety of the public were not affected.

3.0 Cause

The flood control circuit consists of two trains, "A" and "B". Each train closes two of the four condenser CW inlet valves upon detection of a high turbine building water level. When this occurs, a relay (EIIS-RLY) in the respective train's circuit is actuated closing contacts which energize the close coils for the two CW valves.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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Test switches on the flood control panel are used to simulate a high level condition to verify actuation of the relay. With the switches in the test position, energization of the CW valves' close coils is prevented. An indicating light is installed in series with each train's relay to verify coil continuity. Consequently, a minimal voltage is maintained across the relay coil at all times. The original design of the circuit was such that this voltage was not large enough to impact the operation of the relay. It was determined that the original relay had been replaced with a new relay which requires less voltage to hold in after actuation. The minimal voltage maintained across the relay was not sufficient to actuate the more efficient relay. However, it was sufficient to hold in the relay after actuation. Therefore, when the relay was actuated during the "A" train testing, it did not drop out as required when the simulated high level condition was cleared.

It has not been determined at this time how or when the new relays were installed.

4.0 Immediate Corrective Action(s)

Operators took the appropriate actions to maintain the intake canal level within the normal operating band.

5.0 Additional Corrective Action(s)

Engineering evaluated the event and determined the cause. A resistor was added in the relay circuit for both trains in the Unit 2 panels. The resistor will ensure that the voltage across the relay coil is maintained low enough to prevent holding in the relay once it has been actuated.

6.0 Action(s) Taken to Prevent Recurrence

An inspection of the Unit 1 flood panels revealed that the Unit 1 relays are of a different model number than Unit 2 and were previously tested successfully.

An investigation will be conducted to determine how the new relays were installed in Unit 2. Appropriate corrective actions will be taken following completion of the investigation.

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

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

7.0 Similar Events

Unit 2 LER 87-005. In this event, the same CW valves closed when electricians inadvertently completed the logic for closure of the valves while troubleshooting a spurious turbine building flood alarm.

8.0 Manufacturer/Model Number(s)

N/A