NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Surry Power Station, Unit 1	0 5 0 0 0 2 8 0	1 OF 0 3

TITLE (4)
Loss of RHR and Actuation of ESF

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)
0 5	2 4	8 6	8 6	— 0 1 7	— 0 0	0 6	1 3	8 6		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	0 1 0 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
R. F. Saunders, Station Manager	8 0 4 — 3 5 7 - 3 1 8 4

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)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On May 24, 1986 Unit 1 was at refueling shutdown with reactor cavity flooded and forced circulation in service; Unit 2 was at 100% power. Due to maintenance and design change work in progress on Unit 1, numerous electrical busses were cross tied. Among these were 1H and 1J 4160V emergency busses and vital busses 1-II and 1-IV. #1 emergency diesel generator was out of service.

At approximately 1520 hours, reserve station service feeder breaker 15D1 opened. This resulted in an undervoltage transient sensed at 1J emergency bus. #3 emergency diesel generator auto started and assumed load. By design, the 1J stub bus breaker opened during the transient which resulted in the loss of the operating 1B residual heat removal and 1B component cooling pumps. The stub bus breaker was reset and the components were returned to service.

Numerous spurious trip signals, alarms and a Hi Consequence Limiting Safeguards signal were generated during the transient.

IE22
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NRC Form 366
(9-83)

NRC Form 366A (9-83)

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Surry Power Station, Unit 1	0 5 0 0 0 2 8 0	8 6	— 0 1 7	— 0 0	0 2 OF 0 3

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

1. Description of the Event

On May 24, 1986, Unit 1 was at refueling shutdown (RSD) with the reactor cavity flooded and forced circulation in service; Unit 2 was at 100% power. Due to maintenance and design change work in progress on Unit 1, the 1H and 1J 4160V emergency busses were cross tied. #1 Emergency Diesel Generator (EDG), the emergency supply to bus 1-H, was out of service.

At approximately 1520 hours, reserve station service feeder breaker 15D1 opened. This resulted in a momentary undervoltage transient sensed at the 1J emergency bus. #3 EDG auto started and assumed load. By design, the stub bus breaker for 1J emergency bus opened during the undervoltage transient which resulted in the loss of the operating 1B RHR and 1B Component Cooling (CC) pumps. This resulted in a complete loss of RHR. The stub bus breaker was reset and these components were quickly returned to service.

The voltage transient resulted in numerous spurious trip signals, alarms and a spurious Hi-CLS signal.

This report is submitted to report the ESF actuation of the #3 EDG and loss of RHR, which is required by technical specification 3.10.A.6.

2. Safety Consequences and Implications

Upon sensing the undervoltage condition, the #3 EDG responded as designed to assume load. The redundant RHR pump was available during the transient and could have been placed into service as required. The redundant CC pump auto started following the loss of the operating CC pump. Although all RHR flow was briefly interrupted, reactor temperature did not rise.

Because the redundant components remained available and the automatic systems responded as designed, this event did not constitute an unreviewed safety question and the public health and safety were not affected.

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

3. Cause

The cause of the event was personnel error. Breaker testing was in progress on reserve station service to station service breaker 15A1. When the technician was instructed to actuate the HFA relay for breaker 15A1, he erroneously actuated the relay for breaker 15D1. The cubicles containing these relays are located in close proximity in the 4160V normal switchgear room.

4. Immediate Corrective Action

Breaker testing was stopped. The signals and alarms generated by the transient were evaluated. The control room operator verified automatic actuation of the required safety systems.

5. Additional Corrective Actions

The emergency diesel generator was verified to be operating as designed and forced coolant circulation was reestablished. Following replacement of a failed switch in the charging circuit for the closure springs of breaker 15D1, the normal reserve station service feeder was returned to service. The diesel was removed from service. Appropriate NRC notifications were made.

6. Action Taken to Prevent Recurrence

The personnel involved were reinstructed. A Human Performance and Evaluation System (HPES) investigation is being performed to determine root causes of this event.

7. Generic Implications

None.

Vepco

VIRGINIA ELECTRIC AND POWER COMPANY
Surry Power Station
P. O. Box 315
Surry, Virginia 23883

June 13, 1986

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

Serial No: 86-021
Docket No: 50-280
License No: DPR-32

Gentlemen:

Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report for Surry Unit 1.

REPORT NUMBER

86-017-00

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,

R F Saund

R. F. Saunders
Station Manager

Enclosure

cc: Dr. J. Nelson Grace
Regional Administrator
Suite 2900
101 Marietta Street, NW
Atlanta, Georgia 30323

IE22
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