

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) Surry Power Station, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 8 0 1				PAGE (3) OF 0 3		
TITLE (4) Emergency Bus Transformer Cooling Fans Powered From Non-Safety Related Power Supply Due To Design Deficiency																
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	3	8	8	8	8	0	1	5	0	0	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 0 0			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)	
			20.405(a)(1)(i)				50.36(c)(1)				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 D. L. Benson, Station Manager										TELEPHONE NUMBER						
										AREA CODE 8 0 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
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO																

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

On May 23, 1988 at 1800 hours, with Unit 1 in refueling shutdown and Unit 2 in cold shutdown, two station deviation reports were received (one for each unit) concerning non-safety related power supplies {EIIS-JX} for the cooling fans {EIIS-FAN} of both trains of 4160 to 480 volt emergency bus transformers {EIIS-XFMR}. The power supplies to these fans would be lost in the event of a loss of offsite power. An engineering review was initiated. When the results of the engineering review were received at 1030 hours on May 31, 1988, the Station Nuclear Safety and Operating Committee determined that the event could potentially place the plant in an unanalyzed condition. Therefore, the event was reported pursuant to 10CFR50.72(b)(2)(i) at 1150 hours on May 31, 1988. The use of non-safety related power supplies for the cooling fans for the emergency bus transformers is attributed to an original design deficiency. The Unit 2 power sources have been relocated to diesel generator backed supplies. The Unit 1 power sources will be relocated prior to unit startup.

8806280017 880523
PDR ADOCK 05000280
S PDR

1022
11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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 8	— 0 1 5	— 0 0	0 2	OF	0 3

TEXT (If more space is required, use additional NRC Form 386A's) (17)

1.0 Description of the Event

On May 23, 1988 at 1800 hours, with Unit 1 in refueling shutdown and Unit 2 in cold shutdown, two station deviation reports were received (one for each unit) concerning non-safety related power supplies {EIIS-JX} for the cooling fans {EIIS-FAN} of both trains of 4160 to 480 volt emergency bus transformers {EIIS-XFMR}. The power supplies to these fans would be lost in the event of a loss of offsite power. An engineering review was initiated. When the results of the engineering review were received at 1030 hours on May 31, 1988, the Station Nuclear Safety and Operating Committee determined that the event could potentially place the plant in an unanalyzed condition. Therefore, the event was reported pursuant to 10CFR50.72(b)(2)(i) at 1150 hours on May 31, 1988. The use of non-safety related power supplies for the cooling fans for the emergency bus transformers is attributed to an original design deficiency. The Unit 2 power sources have been relocated to diesel generator backed supplies. The Unit 1 power sources will be relocated prior to unit startup.

2.0 Safety Consequences and Implications

An engineering analysis determined that the maximum load on the transformers for the worst case accident loading is 1185 KVA. The transformers are rated to carry 1000 KVA continuously, with no fans operating, for their entire life. However, due to the relatively low loading that the transformers have experienced in the past, (nominally 365 KVA), no accelerated loss of transformer life has occurred to date. The analysis indicated that accelerated emergency bus transformer loss of life due to cooling fan de-energization is not a concern at this point in time. In addition, the maximum post-accident loading would exceed the 1000 KVA value for a very short period of time (less than four hours). Therefore, the health and safety of the public were not affected.

3.0 Cause

The use of non-safety related power supplies for the cooling fans for the emergency bus transformers is attributed to an original design deficiency.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

TEXT (If more space is required, use additional NRC Form 368A's) (17)

4.0 Immediate Corrective Action(s)

Engineering Work Requests were submitted to relocate the cooling fan power supplies to diesel generator backed sources. The cooling fans of other emergency bus transformers were verified to be powered from safety related power supplies.

5.0 Additional Corrective Action(s)

The Unit 2 cooling fan power sources have been relocated to diesel generator backed supplies. The Unit 1 power sources will be relocated prior to unit startup.

6.0 Action(s) Taken to Prevent Recurrence

The current design change review process requires that the potential for common mode failure be evaluated whenever equipment important to safety is affected. This requirement should prevent future design deficiencies of this type.

7.0 Similar Events

None.

8.0 Manufacturer/Model Number

Plant: Westinghouse 3 loop PWR.
A/E: Stone & Webster Engineering Co.
Transformer: I-T-E Imperial Corp./VU-1

VIRGINIA ELECTRIC AND POWER COMPANY

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

June 21, 1988

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

Serial No.: 88-028
Docket No.: 50-280
50-281
Licensee No.: DPR-32
DPR-37

Gentlemen:

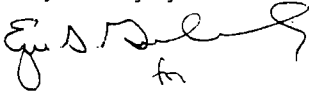
Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report for Surry Unit 1.

REPORT NUMBER

88-015-00

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,



David L. Benson
Station Manager

Enclosure

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

1022
11