

## 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) 1 OF 0 3									
TITLE (4) Main Control Room Ventilation Isolation Due To High Voltage Output On Chlorine Gas Detector																							
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	8	3	0	8	7	0	2	2	0	0	0	9	2	5	8	7	0	5	0	0	0		
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)																					
N		20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 50.73(a)(2)(iv)				73.71(b)									
POWER LEVEL (10)		20.405(a)(1)(i)				50.36(c)(1)				50.73(a)(2)(v)				73.71(c)									
1		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)									
10		20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)													
10		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							
																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 NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD													
SUPPLEMENTAL REPORT EXPECTED (14)																EXPECTED SUBMISSION DATE (15)							
<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 August 30, 1987 at 1533 hours, and on September 3, 1987 at 2314 hours, the Main Control Room ventilation was isolated due to a high voltage output on Chlorine Gas Detector, CLA-VS-100A {EIIS-DET}. As a result of the voltage spike, the Control Room Exhaust Fan, 1-VS-F-15 {EIIS-FAN} tripped and supply damper, 1-MOD-VS-103A {EIIS-DMP} and exhaust damper, 1-MOD-VS-103D {EIIS-DMP} closed. The Chemistry Department verified that there was no chlorine gas present in the control room. The Chlorine Detector was reset and the Main Control Room ventilation {EIIS-VI} realigned. At the time of these occurrences, both Unit 1 and Unit 2 were operating at 100% power.

The chlorine gas treatment system at the Sewage Treatment Plant will be replaced by an ultraviolet system. At that time, a Technical Specification revision will be submitted to remove the Chlorine Gas Detectors.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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	05000280	87	022	000	2	OF 03

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

1.0 Description of the Event

On August 30, 1987 at 1533 hours, and on September 3, 1987 at 2314 hours, the Main Control Room ventilation was isolated due to a high voltage output on Chlorine Gas Detector, CLA-VS-100A {EIIS-DET}. As a result of the voltage spike, the Control Room Exhaust Fan, 1-VS-F-15 {EIIS-FAN} tripped and supply damper, 1-MOD-VS-103A {EIIS-DMP} and exhaust damper, 1-MOD-103D {EIIS-DMP} closed. The Chemistry Department verified that there was no chlorine gas present in the control room. The Chlorine Detector was reset and the Main Control Room ventilation {EIIS-VI} realigned at approximately 1550 on August 30, 1987 and at approximately 2329 on September 3, 1987. At the time of these occurrences, both Unit 1 and Unit 2 were operating at 100% power.

2.0 Safety Consequences and Implications

The Chlorine Gas Detection System {EIIS-VI} consists of two chlorine monitors installed in the Main Control Room (MCR). Each monitor has sensors located in the Main Control Room ventilation supply duct. Each detector operates one set of two series supply and exhaust dampers. When either one of the detectors senses chlorine in excess of 5 ppm, its associated supply and exhaust dampers close and the MCR exhaust fan trips. Initiation of Safety Injection {EIIS-BQ} will also cause the closure of the supply and exhaust dampers and trip the MCR exhaust fan. Although the initiating signal was spurious, the Chlorine Gas Detection System functioned as designed. Chemistry verified that there was no chlorine gas present in the control room. Therefore, these occurrences did not create an unreviewed safety question and the health and safety of the public were not affected.

3.0 Cause

The Main Control Room ventilation isolated due to high sensor voltage on the Chlorine Gas Detector. An investigation performed by the detector vendor determined that the detector sensor operation is air flow dependent due to mounting of the sensor in the ventilation duct. The air flow has a cooling effect on the sensor which increases the voltage output, thus inducing a spurious signal.

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Surry Power Station, Unit 1	0 5 0 0 0 2 8 0 8 7	—	0 2 2	—	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

Chemistry verified that there was no Chlorine gas in the MCR. The ventilation system was realigned.

5.0 Additional Corrective Action

The Chlorine Gas Detector was tested satisfactorily and the detector was returned to service.

6.0 Actions Taken to Prevent Recurrence

The chlorine gas treatment system at the Sewage Treatment Plant will be replaced by an ultraviolet system. At that time, a Technical Specification revision will be submitted to remove the Chlorine Gas Detectors.

7.0 Similar Events

See Unit 1 LER 87-016  
LER 87-020

8.0 Manufacturer/Model Number

Capital Control Company, INC/MPP3045.

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

September 28, 1987

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

Serial No.: 87-025  
Docket No.: 50-280  
Licensee 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

87-022-00

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*

David L. Benson  
Station Manager

Enclosure

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

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