

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) <b>Surry Power Station, Unit 1</b>										DOCKET NUMBER (2) <b>0 5 0 0 0 2 8 0 1</b>				PAGE (3) <b>1 OF 0 3</b>	
TITLE (4) <b>Main Control Room Ventilation Isolation Due To High Voltage Output on Chlorine Gas Detector</b>															
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)		
10	18	87	87	026	00	11	06	87					0 5 0 0 0		
OPERATING MODE (8) <b>N</b>		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)													
POWER LEVEL (10) <b>11010</b>		20.402(b)				20.405(c)				<input checked="" type="checkbox"/> 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 <b>D. L. Benson, Station Manager</b>										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 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 October 18, 1987 at 1621 hours and 1728 hours, the Main Control Room (MCR) 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-F-VS-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 were no unusual chlorine concentrations present in the Control Room. At 1914 hours, the 'A' train of chlorine detection was declared out of service and the 'A' detector was turned off. The Control Room ventilation was then realigned to normal status. The 'A' detector was returned to service on October 20 at 0807 hours. At the time of these occurrences, both Units 1 and 2 were at 100% power. The MCR 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. 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

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Surry Power Station, Unit 1	0 5 0 0 0 2 8 0	8 7	0 2 6	0 0	0 2	OF	0 3

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

1.0 Description of the Event

On October 18, 1987 at 1621 hours and 1728 hours, the MCR 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-F-VS-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 were no unusual chlorine concentrations present in the control room. At 1914 hours, the 'A' train of chlorine detection was declared out of service and the 'A' detector was turned off. The Control Room ventilation was then realigned to normal status. The 'A' detector was returned to service on October 20 at 0807 hours. At the time of these occurrences, both Units 1 and 2 were 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 MCR 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 MCR 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.

NRC Form 366A  
(9-83)

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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TEXT (If more space is required, use additional NRC Form 366A'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 on October 20, 1987 at 0807 hours.

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  
87-020  
87-022

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

November 6, 1987

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

Serial No.: 87-029  
Docket No.: 50-280  
Licensee No.: DPR-32

Gentlemen:

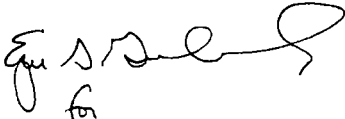
Pursuant to Surry Power Station Technical Specifications, Virginia Electric and Power Company hereby submits the following Licensee Event Report for Surry Unit 1.

REPORT NUMBER

87-026-00

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

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