

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Virgil C. Summer Nuclear Station	0 5 0 0 0 3 9 5	1 OF 0 3

TITLE (4)	Rod Control System Failure
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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	2	1	6	8	5	8	5	-	0	0	1	-	0	1	0	5	2	1	8	5						0	5	0	0	0				
																								0	5	0	0	0						

OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)				
POWER LEVEL (10)		100		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)	
				20.405(a)(1)(i)	50.36(a)(1)	50.73(a)(2)(v)	73.71(c)	
				20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)	
				20.405(a)(1)(iii)	50.73(n)(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	
A. R. Koon, Jr., Assoc. Mgr., Regulatory Compliance	803	845-5200

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	
X	A A	O S L	W 1 2 1	Y							

SUPPLEMENTAL REPORT EXPECTED (14)

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

On February 16 and 27, 1985, the reactor was shutdown in accordance with Action Statement (b) of Technical Specification 3.1.3, "Moveable Control Assemblies," due to failure of the Rod Control System. The failure on February 16 was attributed to a low output from a pulser oscillator circuit, and the failure on February 27 was due to an erratic output of the supervisory buffer memory circuitry. The pulser oscillator circuit was calibrated, and a new supervisory buffer memory card was installed. There were no adverse consequences due to this event. The unit was manually tripped after reducing reactor power. All safety systems functioned as designed with the exception of one Feedwater Isolation Valve (FWIV). After closure, FWIV-1611A cycled open approximately one half inch. The Licensee believes the cycling is due to an internal hydraulic leak. Repairs to the valve will be made during the next outage of sufficient duration, depending on the availability of spare parts. In the interim, a non-permanent modification has been installed to insure feedwater isolation.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
Virgil C. Summer Nuclear Station	0 5 0 0 0 3 9 5	8 5	- 0 0 1	- 0 1	0 2	OF	0 3

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

At approximately 0900 hours, February 16, 1985 with the Plant at 100% power, the Rod Control System was declared inoperable when the control rods failed to respond to a demand signal during manipulation of control rods for Delta Flux control. Reactor power was reduced to 3% and the reactor was manually tripped at 1448 hours in accordance with Action Statement (b) of Technical Specification 3.1.3, "Moveable Control Assemblies."

The Licensee immediately requested the manufacturer provide a technical representative to assist maintenance personnel in repair of the Rod Control System. Deficiencies identified during trouble-shooting were a low output voltage (249V versus 260V) of the Control Rod Drive Motor-Generator, and the pulser oscillator circuit was not in calibration. The output voltage of the Motor-Generator was corrected. The pulser oscillator card from the part-length rod control cabinet, which is not used on this unit, was installed and calibrated. A test procedure was written and approved to allow movement of the control rods thirty (30) steps out and in, while running current traces of the rod coils. A current trace on a rod coil in each group and a trace of the pulser oscillator output was run and found to be satisfactory. It was determined that the rod motion failure was due to the out-of-calibration pulser oscillator card. The applicable surveillance test was satisfactorily performed and the system declared operable at 0530 hours, February 18, 1985.

At 0135 hours, February 27, 1985 with the Plant at 100% reactor power, while attempting to manipulate control rods for Delta Flux control, a rod control system failure urgent alarm annunciated and would not clear. At 0705 hours with reactor power at 10%, the reactor was manually tripped in accordance with Technical Specifications. The Licensee again requested the manufacturer provide a technical representative to assist maintenance personnel. It should be noted that on this failure the alarm would not clear. On the previous failure of February 16, the alarm cleared prior to the investigation by maintenance personnel into the failure. The problem was determined to be with the direction (In/Out) signal. The system was aligned to allow withdrawal of the control rods to 30 steps and to manually step the rods "In" to create the error and to allow tracing of the error signal. The error signal was found to be originating at the output of the supervisory buffer memory card. The card was replaced, and the system was satisfactorily tested and declared operable at 0225 hours, February 28, 1985.

There were no adverse consequences due to this event. The Licensee complied with the action as required by the Technical Specifications. The Licensee plans no additional corrective action associated with the Rod Control System other than scheduled maintenance and testing.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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FACILITY NAME (1)  Virgil C. Summer Nuclear Station	DOCKET NUMBER (2)  0 5 0 0 0 3 9 5 8 5 — 0 0 1 — 0 1 0 3 OF 0 3	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	— 0 0 1	— 0 1	0 3	OF	0 3

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

On each reactor trip, all safety systems functioned as designed with the exception of Feedwater Isolation Valve 1611A. After closure, the valve cycled open approximately one half inch, then cycled closed. The period of the cycling was approximately thirty-two seconds. The problem is believed to be an internal hydraulic leak. Repairs will be made during the next outage of sufficient duration, depending on the availability of spare parts. In the interim, a non-permanent modification has been installed that trips the Feedwater Booster Pumps for feedwater isolation.

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE 764

COLUMBIA, SOUTH CAROLINA 29218

May 21, 1985

O. W. DIXON, JR.  
VICE PRESIDENT  
NUCLEAR OPERATIONS

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

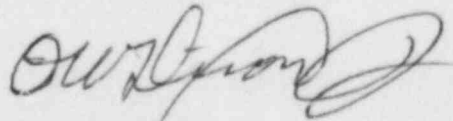
SUBJECT: Virgil C. Summer Nuclear Station  
Docket No. 50/395  
Operating License No. NPF-12  
LER 85-001, Revision 1

Dear Sir:

Attached is Revision 1 to Licensee Event Report #85-001 for the Virgil C. Summer Nuclear Station. This revision is being submitted to provide corrected information. This report was previously submitted on March 18, 1985, in accordance with the requirements of 10CFR50.73(a)(2)(i).

Should there be any questions, please call us at your convenience.

Very truly yours,



O. W. Dixon, Jr.

RJB:OSB/lcd  
Attachment

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