

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Virgil C. Summer Nuclear Station										DOCKET NUMBER (2) 0 5 0 0 0 3 9 5					PAGE (3) 1 OF 02	
TITLE (4) Rod Control System Failure																
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)			
04	18	85	85	011	00	05	17	85					0 5 0 0 0			
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following): (11)																
OPERATING MODE (9)		1		20.402(b)		20.405(c)		X		50.73(a)(2)(iv)		73.71(b)				
POWER LEVEL (10)		1100		20.405(a)(1)(i)		50.38(a)(1)				50.73(a)(2)(v)		73.71(c)				
				20.405(a)(1)(ii)		50.38(a)(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 A. R. Koon, Jr., Assoc. Mgr., Regulatory Compliance										TELEPHONE NUMBER AREA CODE 8103 3451-152019						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC						
X	ALA	ICITR	W11211	N												
SUPPLEMENTAL REPORT EXPECTED (14)																
YES (If yes, complete EXPECTED SUBMISSION DATE)										X NO		EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR

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

At approximately 0147 hours on April 18, 1985, control rods powered by Rod Control System cabinet 2AC failed to move. The affected rods were declared inoperable, and the plant entered Action Statement (b) of Technical Specification 3.1.3.1, "Movable Control Assemblies." During system troubleshooting, an inadvertent rod drop occurred just prior to starting a controlled shutdown of the plant. The rod drop caused a reactor trip from 100% power at 0629 hours on Power Range Negative Rate.

There were no adverse consequences from this event. The Reactor Protection System functioned per design. Due to a previous steam generator tube leak, the steam dumped from the affected steam line to atmosphere and from the Turbine Driven Emergency Feedwater Pump exhaust resulted in an unmonitored release. The release was conservatively calculated to be a small fraction of the allowable release limits.

The Rod Control System failure was determined to be a defective slave cyclor counter card. The card was replaced and a plant restart made after a forced outage of 19.3 hours. To prevent a potential recurrence, the Licensee has established a preventive maintenance program for the Rod Control System cabinets.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 1 1 - 0 0				0 2	OF	0 2

TEXT (If more space is required, use additional NRC Form 365A's) (17)

At approximately 0147 hours on April 18, 1985, control rods powered by Rod Control System cabinet 2AC failed to move during the performance of Surveillance Test Procedure (STP) 106.001, "Movable Rod Insertion Test." There were no Rod Control System urgent alarms and all other rod control groups were functional at the time of the failure. The Licensee declared the affected rods inoperable and entered Action Statement (b) of Technical Specification 3.1.3.1, "Movable Control Assemblies."

The initial troubleshooting of the system indicated that lift coil commands entering power cabinet 2AC from the logic cabinet were in error. In an effort to locate the failed component, a decision was made to exchange the slave cyclor logic and counter cards of rod groups 1BD and 2AC. This action was taken approximately ten minutes prior to starting a controlled shutdown of the plant. The cards were returned to their original cabinets when urgent alarms, which could not be reset, were received from power cabinets 1BD and 2AC. The alarms remained even with the cards returned to their respective cabinets.

Approximately 15-20 seconds after the cards were returned to their cabinets all gripper coils deenergized due to induced errors in the logic of the Rod Control System. The inadvertent rod drop caused a reactor trip at 0629 hours from 100% power on Power Range Negative Rate. Plant response to the trip was normal with the exception of Feedwater Isolation Valve 1611A. As previously noted in LER 85-001, the valve has experienced a cycling problem which was attributed to an internal hydraulic leak. The hydraulic leak was identified and repaired during the last plant outage which began on April 29, 1985.

Due to a previous steam generator tube leak, the steam dumped from the affected steam line to atmosphere and from the Turbine Driven Emergency Feedwater Pump exhaust resulted in an unmonitored release. The release was conservatively calculated to be a small fraction of the allowable release limits.

The Reactor Trip Breakers were closed to support testing after the plant stabilized. Further investigation into the cause of the failure found that the current commands to the lift, movable and stationary gripper coils were incorrect. Additionally, it was noted that for about five milliseconds during the stepping cycle, power to both stationary and movable gripper coils was lost. This power loss is believed to have been the initiating event for the reactor trip. The component failure, which caused the erroneous signals, was determined to be slave cyclor counter card 2AC. The defective card was replaced and the correct operation of the Rod Control System confirmed prior to initiating a plant restart.

To prevent a potential recurrence, the Licensee developed a preventive maintenance (PM) procedure based upon the vendor's recommendations. The PM was subsequently completed on May 6, 1985.

SOUTH CAROLINA ELECTRIC & GAS COMPANY

POST OFFICE 764

COLUMBIA, SOUTH CAROLINA 29218

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

May 17, 1985

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

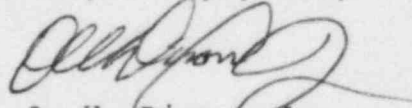
SUBJECT: Virgil C. Summer Nuclear Station
Docket No. 50/395
Operating License No. NPF-12
LER 85-011

Dear Sir:

Attached is Licensee Event Report #85-011 for the Virgil C. Summer Nuclear Station. This Report is submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

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

Very truly yours,



O. W. Dixon, Jr.

CJM:OSB/lcd
Attachment

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