

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 0 2							
TITLE (4)																						
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)									
1	2	17	8	5	8	5	0	3	2	0	0	1	2	2	0	8	5	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)																				
1		20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)								
POWER LEVEL (10)		0 2 0				20.405(a)(1)(i)				50.36(a)(1)				73.71(c)								
		20.405(a)(1)(ii)				50.36(a)(2)				50.73(a)(2)(v)				XX OTHER (Specify in Abstract below and in Text, NRC Form 365A)								
		20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(vii)(A)				10CFR21								
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(vii)(B)												
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)												
LICENSEE CONTACT FOR THIS LER (12)																						
NAME										TELEPHONE NUMBER												
A. M. Paglia, Manager, Nuclear Licensing										AREA CODE 8 0 3 7 4 8 - 3 9 6 1												
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													
B	EK	MOP	B 0 9 3	Y																		
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)

The 24 v d.c. motor associated with the voltage regulator for the Colt Industries Emergency Diesel Generators (DG) failed due to a cracked delron pinion gear within the motor housing. As a result of the failure, DG output voltage could exceed tolerance requirements. This exciter voltage regulator/motor operated potentiometer (MOP) assembly contains a 24 v d.c. motor and pinion gear drive assembly, manufactured by Barber Coleman, and potentiometer manufactured by Basler Electric. The motor, Barber Coleman Model CYOM23610-19, part of the MOP utilized by Basler Electric in their Static Exciter Regulator, was supplied by Colt Industries as a component part of the DG.

The MOP is designed to automatically maintain its center position throughout "emergency start" modes of operation and maintain the correct DG output voltage. An evaluation of the MOP determined that a possible cause of the gear failure may have been attributed to an incompatibility between the gear material (delron) and the gear lubricant. Failure of the MOP, in a position other than center, could cause the DG output voltage to be out of tolerance for the next emergency start operation.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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 3 2	— 0 0	0 2	OF 0 2

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

On December 17, 1985, the Licensee determined that a substantial safety hazard existed relative to failure of a component on Colt Industries Emergency Diesel Generators (DG). The failed component being a geared drive motor manufactured by Barber Coleman, Model CYQM 23600-19. The motor is part of the Motor Operated Potentiometer (MOP) assembly manufactured by Basler Electric.

The failure, a cracked motor pinion gear manufactured of a plastic material (delron), resulted in the inoperability of the DG automatic voltage adjust control which could cause the DG output voltage to be out of tolerance.

The MOP establishes the correct DG output voltage by automatically maintaining the output voltage at 7200 volts \pm 10% during operation and by returning to its preset position after shutdown, it positions itself for the next "emergency start mode".

The Licensee's evaluation revealed that the failure was due to a gear failure that could possibly be attributed to an incompatibility between the motor gear plastic material (delron) and the gear lubricant. Colt has indicated that this was recognized as a synergistic effect in their qualification testing (thermal aging) to IEEE 323-1974.

There are four MOP assemblies installed at V. C. Summer Nuclear Station, two assemblies on the DG "A" and two on DG "B".

Immediate corrective action has been taken to verify that the DGs' "steady state no load voltages" are within required voltage tolerances. This provides assurance that the "Auto Adjust Control" is at the preset position and will not adversely affect output voltage on an emergency start. This action also verifies that the MOP has performed its safety function prior to the next DG start.

Final corrective action is being taken by procuring and replacing the model CYQM 23610-19 delron gear motors with qualified model CYQC 23600-19 steel gear motors.

Other owners of Diesel Generators, which have MOP assemblies with Barber Coleman geared motors, should evaluate the motor application and determine if a similar safety concern exists.



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Dan A. Nauman
Vice President
Nuclear Operations

December 20, 1985

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Document Control Desk
Washington, DC 20555

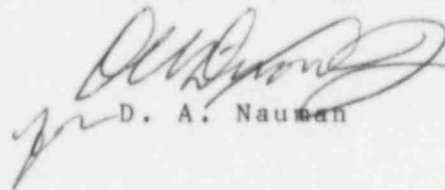
SUBJECT: Virgil C. Summer Nuclear Station
Docket No. 50/395
Operating License No. NPF-12
LER 85-032
P-21-85-004

Dear Sir:

Attached is Licensee Event Report #85-032 for the Virgil C. Summer Nuclear Station. This LER addresses the recent failure of Barber Coleman motors associated with the voltage regulator assemblies supplied on Colt Industries Emergency Diesel Generators. This report should be considered a Final Report, and no other action will be taken by the Licensee.

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

Very truly yours,



D. A. Nauman

HID/DAN:dwf
Attachment

cc: V. C. Summer	K. E. Nodland
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