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Vice President  
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December 9, 1992

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

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION  
DOCKET NO. 50/395  
OPERATING LICENSE NO. NPF-12  
LER 92-008 (ONO 920076)

Attached is Licensee Event Report No. 92-008 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,

*Gary J. Taylor for*  
*J L Skolds*  
John L. Skolds

JWP:JLS:nkk  
Attachment

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NUCLEAR EXCELLENCE - A SUMMER TRADITION!

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## 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 5	
TITLE (4) Partial Loss of Offsite Power ESF Actuation Due To Fallen Tree																					
EVENT DATE (6)			LER NUMBER (8)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (9)											
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME			DOCKET NUMBER (5)									
1	1	4	9	2	0	0	8	0	0	1	2	0	9	9	2	0	5	0	0	0	
OPERATING MODE (3)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)																			
1		20.402 (b)				20.406 (a)				V				50.734 (2)(iv)				73.71 (b)			
POWER LEVEL (10)		1 0 0				20.406 (a)(1)(i)				50.38 (a)(1)				50.734 (2)(iv)				73.71 (a)			
		20.406 (a)(1)(ii)				50.38 (a)(2)				50.734 (2)(iv)				50.734 (2)(iv)				OTHER (Specify in Appendix B, Form 306A)			
		20.406 (a)(1)(iii)				50.734 (2)(i)				50.734 (2)(iv)(A)				50.734 (2)(iv)(B)							
		20.406 (a)(1)(iv)				50.734 (2)(ii)				50.734 (2)(iv)(B)				50.734 (2)(ii)							
		20.406 (a)(1)(v)				50.734 (2)(iii)				50.734 (2)(iv)(B)				50.734 (2)(ii)							
LICENSEE CONTACT FOR THIS LER (12)																					
NAME W. B. Higgins, Supervisor, Licensing Support & Operating Experience										TELEPHONE NUMBER 8 0 3 3 4 5 - 4 0 4 2											
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																					
CAUSE	SYSTEM	COMPONENT	MANUFAC. TYPENR	REPORTABLE TO NRCDS		CAUSE	SYSTEM	COMPONENT	MANUFAC. TYPENR	REPORTABLE TO NRCDS											
V				N																	
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)											
YES (If yes, complete EXPECTED SUBMISSION DATE)										NO											

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

On November 14, 1992, an ESF actuation occurred at V. C. Summer Nuclear Station (VCSNS) following a partial loss of offsite power. At approximately 1436 hours, a tree was pushed into the transmission line between V. C. Summer Nuclear Station and Graniteville, S.C., causing a phase-to-phase short. This was sensed by the Oil Circuit Breaker (OCB) as a fault condition. The Graniteville Breaker was slow to trip which caused the breaker failure relay to strip the 230kv offsite power bus. This deenergized vital bus 10B inside the plant and actuated "B" Diesel Generator. The Emergency Diesel Generator started and loaded properly.

Maintenance and testing have been performed on the OCB to verify all electrical relays operate normally. No problems were found. The cause of the slow opening of the OCB is suspected to be mechanical binding, although this has not reoccurred in any subsequent testing or inspections. Substation personnel lubricated and stroked the OCB several times. The OCB now opens in approximately 2 cycles.

V. C. Summer Nuclear Station will investigate increasing the frequency of the preventive maintenance on OCBs to make a determination by July 1, 1993.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		9 2	0 0 8	0 0	

TEXT (if more space is required, use additional NRC Form 305A's) (17)

PLANT IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION:011 Circuit Breaker  
E11S System Code - FKIDENTIFICATION OF EVENT:

A partial loss of offsite power caused the actuation of the 'B' train Emergency Diesel Generator.

EVENT DATE:

November 14, 1992, at 1436 hours.

REPORT DATE:

December 9, 1992

This report was initiated by Off-Normal Occurrence Report 92-076.

CONDITIONS PRIOR TO THE EVENT:

Mode 1, 100% Reactor Power

DESCRIPTION OF EVENT:

On November 14, 1992, at approximately 1436 hours, a bulldozer pushed a tree into the transmission line between V. C. Summer Nuclear Station (VCSNS) and Graniteville, S. C. causing a phase-to-phase short. Figure 1 illustrates the VCSNS Offsite Distribution System. OCB 8732, located in the switchyard at VCSNS, and the local OCB in Graniteville both received trip signals. The local OCB in Graniteville operated properly and opened within six cycles. OCB 8732 operated much slower, taking approximately 38 cycles to open. The breaker failure relay back up for OCB 8732, timed out at ten cycles isolating switchyard buses 3 and 2. This tripped the following breakers:

1. Fairfield Pump Storage #1 - OCB 8942

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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Virgil C. Summer Nuclear Station	0 5 0 0 0 3 9 5	9 2	0 0 8	0 0	0 3	OF	0 5

TEXT (if more space is required, use additional NRC Form 355A's) (17)

- |                                      |    |   |          |
|--------------------------------------|----|---|----------|
| 2. Fairfield Pump Storage            | #2 | - | OCB 8912 |
| 3. Newberry/Public Service Authority | #2 | - | OCB 8722 |
| 4. Parr                              | #1 | - | OCB 8742 |
| 5. Parr                              | #2 | - | OCB 8772 |
| 6. Denny Terrace                     | #1 | - | OCB 8792 |
| 7. Bus 1 to Bus 3 Tie Brkr           |    | - | OCB 8822 |
| 8. Emergency Aux Transformers        |    | - | OCB 8892 |

The loss of power to switchyard bus 3 resulted in the loss of feed to the Emergency Auxiliary Transformers, deenergizing 'B' train ESF bus XSW1DB. The undervoltage relay for bus XSW1DB started the load sequencer for 'B' train. Emergency Diesel Generator 'B' started and loaded normally.

CAUSE OF EVENT:

Extensive testing has been performed on OCB 8732, the Graniteville breaker at VCSNS, to determine the cause of slow opening. This testing was performed after an initial slow close check and lubrication of the linkage by substation personnel. No electrical or mechanical problems have been found and timed testing of this OCB has found the operation to be fully acceptable. Even though testing of the OCB did not confirm it, mechanical binding is believed to have been the probable cause of the slow operation.

The normal five year preventive maintenance last performed in 1987. This maintenance activity which includes an inspection of the internal parts of the breaker, revealed no evidence of mechanical problems. Additional preventive maintenance performed on the OCBs is a yearly functional test. This maintenance, which was last performed in September, 1991, includes lubrication, meggering and inspection of exterior parts of the OCB. It should be noted that this breaker operated properly on a fault in 1991 (immediately prior to the yearly maintenance).

ANALYSIS OF EVENT:

The 'B' Emergency Diesel Generator performed its design function to start and supply ESF equipment with power on a loss of voltage to bus XSW1DB. 'B' Diesel Generator carried the 1DB bus for approximately 5 hours. The breaker failure relay isolated the switchyard buses at the proper time and all breakers except OCB 8732 operated properly.

There were no adverse consequences from this event.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8-31-95

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

IMMEDIATE CORRECTIVE ACTIONS:

Switchyard personnel were called in to investigate and repair the OCB 8732 failure. Offsite power was restored to ESF 'B' train at approximately 1930 hours and 'B' Emergency Diesel Generator was secured.

An operability test was performed on 'A' Emergency Diesel Generator in accordance with Technical Specification surveillance requirement 4.8.1.1.2.a.3.

An operability test was performed on the other source of offsite power in accordance Technical Specification with surveillance requirement 4.8.1.1.1.

ADDITIONAL CORRECTIVE ACTIONS:

To prevent the recurrence of this event, VCSNS will investigate increasing the frequency of preventive maintenance on OCBs. This investigation will consider the findings from maintenance performed on OCBs until June 30, 1993. A determination of whether an increased frequency is appropriate will be completed by July 1, 1993.

PRIOR OCCURRENCES:

None

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TABLE 17. Growth kinetics in fermenter at 30°C. *Enterobacter aerogenes* ATCC 29212. 117

0	5	0	0	0	5	9	5	9	2	—	0	0	8	—	0	0	0	5	0	5
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## Fig. 1