

General Information or Other (PAR)

Event # 39670

Rep Org: WESTINGHOUSE	Notification Date / Time: 03/14/2003 15:47 (EST)
Supplier: ABB INC	Event Date / Time: 03/14/2003 (EST)
	Last Modification: 12/25/2003
Region: 1	Docket #:
City: PITTSBURGH	Agreement State: No
County:	License #:
State: PA	
NRC Notified by: HANK SEPP	Notifications: DAVID AYRES R2
HQ Ops Officer: YAMIR DIAZ	MARK SHAFFER R4
Emergency Class: NON EMERGENCY	JACK FOSTER NRR
10 CFR Section:	BRIAN MCDERMOTT R1
21.21 UNSPECIFIED PARAGRAPH	KENNETH O'BRIEN R3

10 CFR PART 21 REPORT REGARDING FAILURES OF ABB CIRCUIT BREAKERS

Circuit breakers manufactured by ABB Inc. and used for Class 1E applications by Westinghouse were shipped to the Calvert Cliffs Plant with model 5 operating mechanisms installed. Recently, Westinghouse had retrofitted the breakers with model 7 operating mechanisms manufactured by ABB Inc. Westinghouse validated that the original breaker qualifications (for Class 1E applications) are still applicable with the model 7 operating mechanism installed. Two of these breakers failed to close and latch during testing at Calvert Cliffs. The first breaker failed to close and latch during acceptance testing on January 18, 2003. The second breaker failed to close and latch during its installation acceptance test in the breaker cubicle on January 27, 2001.

*** UPDATE VIA FAX ON 12/24/03 AT 15:25 CST BY ABB INC ***

Summary: The issue reported in the notification above is limited in scope and there is no indication that the failure mode will exist in a K-Line breaker. ABB does concur that dimensional non-conformities were present in the breakers that exhibited the fail to close of the primary and secondary trip latches. ABB also concurs that this out-of-tolerance situation is contributory to the failure exhibited in the 5VHKR250 1200A breaker but is not in and of itself the root cause of failure.

Notified R1DO (R. Lorson), R2DO (M. Ernstes), R3DO P. Louden), R4DO (L. Smith), NRR (Jack Foster) via email

JE/19

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24 December 2003

Subject: Clarification to "Notification of the Potential Existence of Defects pursuant to 10 CFR 21" issued by Westinghouse Electric Company on 14 March 2003 regarding failure to close and latch situation reported on Medium Voltage (4KV) 5VHKR/250 Model 80, 1200A located at Calvert Cliffs Nuclear Power Plant regarding applicability to ABB K-Line Breakers.

Notification by: ABB Inc.
Circuit Breaker Technology Solutions
2300 Mechanicsville Road
Florence, SC 29501

As a clarification to the 10CFR21 notification report filed by Westinghouse Electric Company issued on 14 March 2003, please accept the following.

The issue reported in the notification above is limited in scope to the use of a Model 7 K-Line type mechanism installed in a VHKR vacuum conversion element used in a medium voltage conversion breaker designed by the former ABB Service, Inc. and dedicated by ABB Combustion Engineering, Inc., now part of Westinghouse Electric. After a thorough investigation, there is no indication that the failure mode described in the Westinghouse 10CFR21 notification referenced above will exist in a K-Line breaker.

ABB does concur that dimensional non-conformities were present in the breakers that exhibited the fail to close and latch situation. Specifically, the primary and secondary trip latches. ABB also concurs that this out-of-tolerance situation is contributory to the failure exhibited in the 5VHKR250 1200A but is not in and of itself the root cause of failure.

Additionally, it must be understood that the forces experienced by the model 7 mechanism are dynamically different in magnitude as seen in the VHKR Medium Voltage conversion than those in the standard K-Line breaker. Therefore, there is no indication that the failure mode defined in the Westinghouse Part 21 report will be present in the standard Low Voltage K-Line breaker. To support that, research indicates that, since 1999, ABB has manufactured approximately 3000 K-type model 7 mechanisms. A review of the ABB Customer Complaint Resolution Process (CCRP) database for the same timeframe shows no evidence of any occurrence of the failure type described herein. Additionally, in

support of this position, a 5000 operation mechanical endurance test was performed in a K-Line Breaker containing a mechanism with primary and secondary trip latches known to have the same out-of-tolerance attributes as those found in the Calvert Cliffs units. This test was performed successfully with no close and latch failures.

It is completely clear and must be understood that the failure mode described here is in no way, shape or form related or similar to the contributory conditions as defined in the part 21 notification issued by ABB in May of 2002 regarding the pre-model 7 operating mechanisms.

As one final point of clarification, the Calvert Cliffs units discussed herein are the only medium voltage conversion breakers in a safety related application that utilize the VHCR operating element. No other ABB designed safety related medium voltage vacuum breakers utilize this element. Therefore, there are no other potentially affected parties.

In addition to communication to the NRC, this notification will be provided to the EPRI NMAC ABB Circuit Breaker Users Group for industry distribution. Any questions concerning this clarification should be directed to Pat O'Neal at 843-413-4708.



Patrick O'Neal
Quality, Engineering and Environmental Manager
ABB Inc.
Circuit Breaker Technology Solutions
Florence, SC