



June 30, 1999  
LD-99-039

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

**Subject: Report of a Defect Pursuant to 10 CFR 21 Concerning  
ABB 1200A 4KV Vacuum Breakers**

Reference: LD-99-035, Same Subject, dated June 25, 1999

The subject letter notified the Nuclear Regulatory Commission of a defect as defined in 10 CFR 21, "Reporting of Defects and Noncompliance." This letter provides an update to certain information in the enclosure to that letter. Margin bars are provided in the attachment to identify areas of change.

The reported defect concerns ABB 1200A 4KV Vacuum Breakers delivered to Baltimore Gas and Electric Company's Calvert Cliffs Nuclear Power Plant. Specifically, the defect concerns the breaker performing a trip free operation when a close signal is received by the breaker. This defect results in the breaker failing to remain in the closed position. The defect could lead to a non-conservative condition such as failure of certain plant equipment, e.g., an Emergency Core Cooling pump, to start upon demand.

The attachment provides information as required by 10 CFR 21. Please feel free to contact me or Virgil Paggan of my staff at 860-285-4700 if there are any questions.

Very truly yours,

Ian C. Rickard, Director  
Nuclear Licensing

Attachment:

cc: J. M. Triampo (ABB Automation)

ABB Combustion Engineering Nuclear Power, Inc.

P.O. Box 500

2000 Day Hill Rd  
Phone 860-285-9678

Windsor, CT 06095-0500  
Fax (860) 285-3253

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### 10 CFR 21 Report of a Defect or Failure to Comply

The following information is provided pursuant to the requirements set forth in 10 CFR 21.21(c)(4):

*(i) Name and address of the individuals informing the Commission:*

Ian C. Rickard, Director  
Nuclear Licensing  
ABB Combustion Engineering Nuclear Power, Inc.  
2000 Day Hill Road  
Windsor, CT 06095-0500

*(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect:*

The activity for which this report is being filed is the use of ABB 1200A 4KV Vacuum Breakers in an applications where the breaker is normally open and must close on demand. This defect applies only to the Baltimore Gas and Electric Company's (BG&E's) Calvert Cliffs Nuclear Power Plant (CCNPP).

*(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect:*

ABB Combustion Engineering Nuclear Power, Inc.  
2000 Day Hill Road  
Windsor, CT 06095-0500

*(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply:*

The defect identified is associated with the use of the ABB 1200A 4KV Vacuum Breaker only in applications where the breaker must close on demand. The defect was detected during site testing of the breaker during installation into CCNPP. During this test, a close signal was applied to the breaker and the breaker tripped free (i.e., failed to remain in the closed position).

These breakers are intended for both normally open and normally closed operation. In some applications, the breaker must close upon demand. This may be for electrical distribution applications or component control applications (e.g., start an Emergency Core Cooling pump). Demands can be automated (e.g., by ESFAS) or based on manual operator demands. If the breaker does not remain closed when demanded (i.e., trips free), the safety function cannot be performed. This breaker is intended for use in multiple redundant safety divisions. Multiple redundant divisions could be affected by this defect.

- (v) *The date on which the information of such defect or failure to comply was obtained:*

A defect was determined to exist in this breaker on June 25, 1999.

- (vi) *In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part:*

The defect applies only to ABB 4KV Vacuum Breakers delivered to CCNPP. Thirty-seven (37) of these breakers were delivered to CCNPP. ABB CENP understands that several of these breakers have been installed at CCNPP, however, none are installed in any application that requires a close on demand function.

- (vii) *The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action:*

Evaluations of the defect have been performed by ABB Automation. A root cause evaluation and corrective action plan are currently being developed jointly by ABB Automation, ABB Service Co. and Baltimore Gas and Electric.

- (viii) *Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees:*

Baltimore Gas and Electric Company's CCNPP has been notified of the defect and has been provided with necessary information. BG&E is part of the corrective action team developing recommendations for resolution of this issue.