

Part 21 (PAR)

Event # 50371

<b>Rep Org:</b> ABB, INC	<b>Notification Date / Time:</b> 08/15/2014 11:00 (EDT)
<b>Supplier:</b> ABB, INC	<b>Event Date / Time:</b> 08/15/2014 (EDT)
	<b>Last Modification:</b> 08/15/2014
<b>Region:</b> 1	<b>Docket #:</b>
<b>City:</b> FLORENCE	<b>Agreement State:</b> Yes
<b>County:</b>	<b>License #:</b>
<b>State:</b> SC	
<b>NRC Notified by:</b> DAVID BROWN	<b>Notifications:</b> SILAS KENNEDY R1DO
<b>HQ Ops Officer:</b> JEFF ROTTON	GEORGE HOPPER R2DO
<b>Emergency Class:</b> NON EMERGENCY	MICHAEL KUNOWSKI R3DO
<b>10 CFR Section:</b>	JACK WHITTEN R4DO
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	PART 21 GROUP EMAIL

## NOTICE OF DEVIATION REGARDING K-LINE CIRCUIT BREAKER SECONDARY CLOSE LATCH

The following information was excerpted from a facsimile received from ABB, Inc:

"This letter provides notification of a failure to comply with specifications associated with a secondary close latch, part number 716610K01, used in K-Line 225/800 and 1600/2000 amp electrically operated Model 7 circuit breakers. This does not affect previous models of these same breakers that have not been upgraded to include the interlocking primary and secondary close latches. It also does not affect manually operated Kline breakers or K3000/4000 circuit breakers. Information is provided as specified in 10CFR21 paragraph 21.21(d)(4).

"Notifying individual: Jay Lavrinc, Vice President & General Manager, ABB (Medium Voltage Service), 2300 Mechanicsville Road, Florence, SC 29501

"Identification of the Subject component: ABB part number 716610K01 secondary close latch. This secondary close latch is used on new legacy K-Line Model 7 electrically operated circuit breakers. It is also used during breaker refurbishments when a secondary close latch is required to be replaced because of damage or wear. The secondary close latch is available as a component part and is also used in K-Line Model 7 up-grade kits.

"If a breaker is sent in for refurbishment the primary and secondary latches are replaced unless it is required in the customer PO that they not be replaced unless they are damaged or worn.

"Nature of the deviation: During outgoing inspection a breaker went trip free during the operational phase of the testing procedure. The inspector found that the cam attached to the top of the secondary close latch, 716610K01, was not properly riveted in place. The head of the rivet was not pushed down flush against the side of the cam. Since the rivet was not seated properly, the other end of the rivet did not project through the other side of the latch

IE19  
NRO

and therefore the bradded end of the rivet was not deformed in a manner to sufficiently apply the required holding force to keep the cam in its proper and secure operating position.

"Corrective actions include:

- a. Perform 100% inspection all part number 716610K01 secondary close latches in inventory to identify the nonconforming latches. (Action complete)
- b. Trained inspectors and breaker assemblers on identifying this condition (Action Complete)
- c. Contact primary vendor to investigate cause and correct on future orders. (Action Complete)
- d. Verified that this is the only assembly with bradding that this vendor provides. (Action complete)
- e. Notification of the potential existence of this deviation to affected customers (Action to be completed by 18 August 2014)

"Affected Customers: Constellation Energy, DTEEnergy, Entergy Operations, Exelon Corporation

"Recommendations: It is recommended that affected Licensees that have received latches that were identified as having been provided from parts that fall under this notification take the following actions:

"If the latch is in their inventory as a component, in a kit or in a breaker that is not currently in use it is suggested that the secondary trip latch be inspected for this condition. Inspection should include visual inspection of the rivets to confirm they are properly seated and bradded and physical manipulation of the cam to determine that it is securely held in place in the assembly.

"If a suspect latch is installed in a breaker that is currently installed and energized we recommend that at their next maintenance cycle, the secondary close latch in the breaker be inspected for this condition.

"We currently cycle Kline breakers that are refurbished approximately 55 close/open operations before they ship from the Florence facility. New breakers get at least that many operations or more. If a breaker has shipped out of the Florence facility during this period it is unlikely that the breaker would get through inspection without failing with a latch that is improperly riveted. ABB cannot guarantee that no latch on a breaker that shipped is affected but we do not see it as a likely occurrence with the testing that the breaker is subjected to prior to shipment. There have been no field failures reported that were attributed to this manufacturing issue."

\*\*\*\*\*



August 15, 2014

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
FAX 301-816-5151

Subject: 10CFR Part 21 Notification of Deviation re. K-Line Circuit Breaker Secondary Close Latch

1. This letter provides notification of a failure to comply with specifications associated with a secondary close latch, part number 716610K01 (see Figure 1), used in K-Line 225/800 and 1600/2000 amp electrically operated Model 7 circuit breakers. This does not affect previous models of these same breakers that have not been upgraded to include the interlocking primary and secondary close latches. It also does not affect manually operated Kline breakers or K3000/4000 circuit breakers. Information is provided as specified in 10CFR21 paragraph 21.21(d) (4).

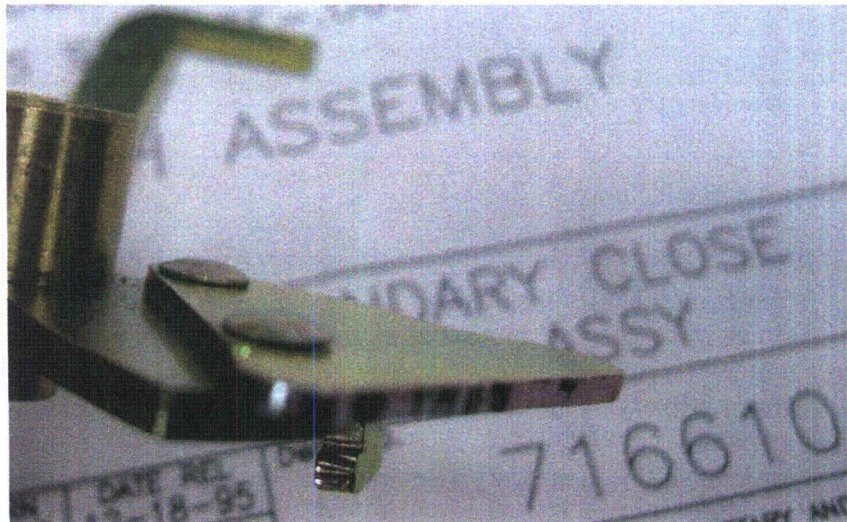


Figure 1 - Secondary Close Latch

2. Notifying individual: Jay Lavrinc, Vice President & General Manager, ABB (Medium Voltage Service), 2300 Mechanicsville Road, Florence, SC 29501
3. Identification of the Subject component: ABB part number 716610K01 secondary close latch. This secondary close latch is used on new legacy K-Line Model 7 electrically operated circuit breakers. It is also used during breaker refurbishments when a secondary close latch is required to be replaced because of damage or wear. The secondary close latch is available as a component part and is also used in K-Line Model 7 up-grade kits.
4. If a breaker is sent in for refurbishment the primary and secondary latches are replaced unless it is required in the customer PO that they not be replaced unless they are damaged or worn.

**ABB Inc.**



5. Nature of the deviation:

During outgoing inspection a breaker went trip free during the operational phase of the testing procedure. The inspector found that the cam attached to the top of the secondary close latch, 716610K01, was not properly riveted in place. The head of the rivet was not pushed down flush against the side of the cam. Since the rivet was not seated properly, the other end of the rivet did not project through the other side of the latch and therefore the bradded end of the rivet was not deformed in a manner to sufficiently apply the required holding force to keep the cam in its proper and secure operating position. (see Figure 2)

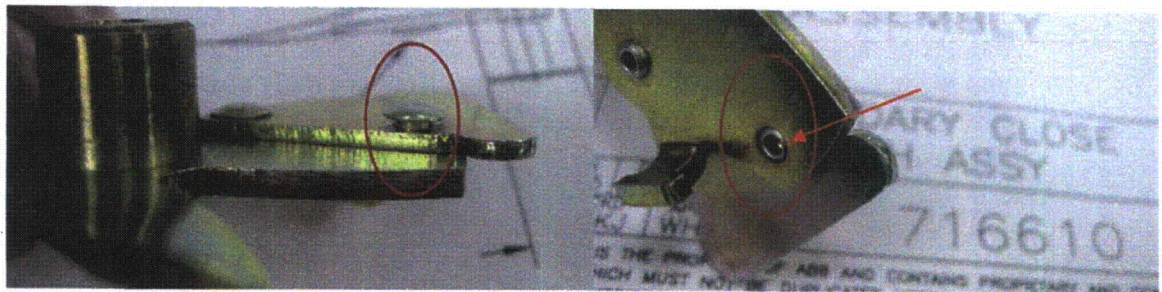


Figure 2 – Secondary Close Latch

6. Corrective actions include:

- a. Perform 100% inspection all part number 716610K01 secondary close latches in inventory to identify the nonconforming latches. (Action complete)
- b. Trained inspectors and breaker assemblers on identifying this condition (Action Complete)
- c. Contact primary vendor to investigate cause and correct on future orders. (Action Complete)
- d. Verified that this is the only assembly with bradding that this vendor provides. (Action complete)
- e. Notification of the potential existence of this deviation to affected customers (Action to be completed by 18 August 2014)

Affected Customers:

- Constellation Energy
- DTE Energy
- Entergy Operations
- Exelon Corporation

7. Recommendations:

It is recommended that affected Licensees that have received latches that were identified as having been provided from parts that fall under this notification take the following actions:

**ABB Inc.**



If the latch is in their inventory as a component, in a kit or in a breaker that is not currently in use it is suggested that the secondary trip latch be inspected for this condition. Inspection should include visual inspection of the rivets to confirm they are properly seated and bradded and physical manipulation of the cam to determine that it is securely held in place in the assembly. (see Figure 3)

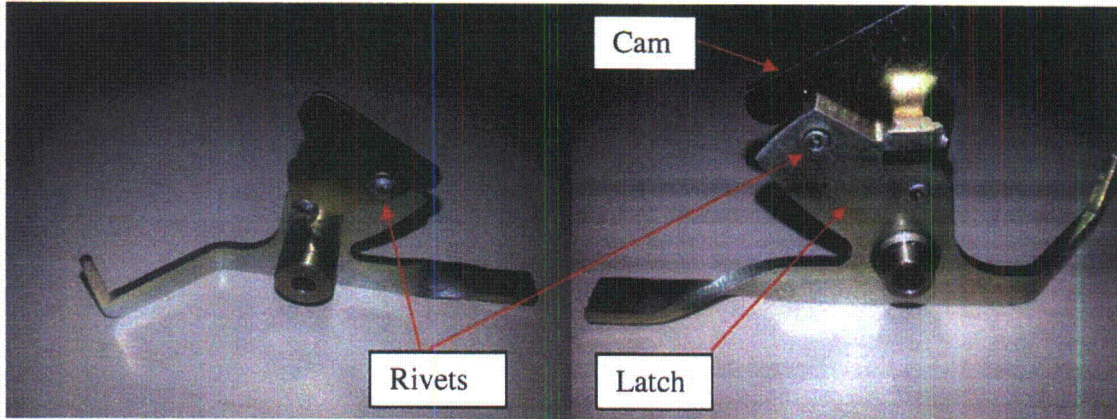


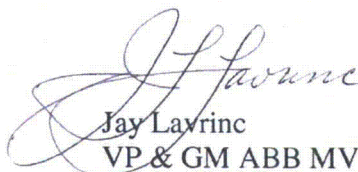
Figure 3 – Inspection Points

If a suspect latch is installed in a breaker that is currently installed and energized we recommend that at their next maintenance cycle, the secondary close latch in the breaker be inspected for this condition.

We currently cycle Kline breakers that are refurbished approximately 55 close/open operations before they ship from the Florence facility. New breakers get at least that many operations or more. If a breaker has shipped out of the Florence facility during this period it is unlikely that the breaker would get through inspection without failing with a latch that is improperly riveted.

ABB cannot guarantee that no latch on a breaker that shipped is affected but we do not see it as a likely occurrence with the testing that the breaker is subjected to prior to shipment. There have been no field failures reported that were attributed to this manufacturing issue.

Very truly yours,

  
Jay Layrinc  
VP & GM ABB MVS

**ABB Inc.**