

Part 21 (PAR)

Event # 51976

<b>Rep Org:</b> ABB, INC. <b>Supplier:</b> ABB, INC.	<b>Notification Date / Time:</b> 06/03/2016 13:14 (EDT) <b>Event Date / Time:</b> 06/03/2016 (EDT) <b>Last Modification:</b> 06/03/2016
<b>Region:</b> 1 <b>City:</b> FLORENCE <b>County:</b> <b>State:</b> SC	<b>Docket #:</b> <b>Agreement State:</b> Yes <b>License #:</b>
<b>NRC Notified by:</b> DAVID C. BROWN <b>HQ Ops Officer:</b> DONG HWA PARK <b>Emergency Class:</b> NON EMERGENCY <b>10 CFR Section:</b> 21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	<b>Notifications:</b> DAVID HILLS R3DO PART 21/50.55 REACTORS EMAIL

PART 21 - NOTIFICATION OF DEVIATION OF K-LINE CIRCUIT BREAKER SECONDARY TRIP LATCH

The following was excerpted from a report from ABB, Inc. via email:

"This letter provides notification of a defect associated with the secondary trip latch, P/N: 716789E00, which is used in the 167710T01 & 167710T03 secondary latch bar assembly and assembly kit, respectively. These assemblies are used in low voltage K-Line 225-800 Amp and 1600-2000 Amp circuit breakers. The reported failure was caused by the pin in the secondary trip latch that the return spring attaches to not being installed properly. The pin hit the tab on the tripper bar when the latch returned to the reset position. This caused the breaker to trip open. This failure was reported by Xcel Energy Prairie Island Nuclear Plant and it is the only reported occurrence of a failure caused by the return spring pin being out of position. The secondary trip latch has been cast by the same since 1996. No other field failures or failures in the ABB Service facilities have been reported as a result of this pin being out of position. Information is provided as specified in 10CFR21 paragraph 21.21(d)(4).

"Notifying individual: Andrew Wall, Vice President & General Manager, ABB (Electrification Products Medium Voltage Service US), 2300 Mechanicsville Road, Florence, SC 29501

"Identification of the Subject component: ABB part numbers 716789E00 (secondary latch bar) and 167710T01 & 167710T03 (secondary latch bar assemblies). The secondary latch bar is available as an individual component and the secondary latch bar assemblies are utilized as components, as part of refurbishment kits, in K-Line operating mechanisms, in new K-Line breakers, and they may be replaced during a K-Line breaker refurbishment.

"Nature of the deviation: The pin that holds the return spring in place was not properly installed. The defect is believed to have occurred during the assembly process of the latch bar. The latch used in the Prairie Island

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Nuclear Plant circuit breaker was fabricated in 2013.

"Corrective actions include:

Quarantined and inspected PIN: 716789E00 and 167710T01/167710T03 assemblies in inventory. (Action complete)

Notified vendor of the issue via the ABB Supplier Corrective Action Request process. (Action complete)

Revised Critical Characteristic card for PIN: 716789E00 to incorporate measurement of the pin in question. (Action complete)

Conducted training with QA and Operations personnel for awareness (Action complete)

"Recommendations:

Because of the large potential variety of usages of the potentially affected circuit breakers, ABB (Medium Voltage Service) cannot determine if the potential for a substantial safety hazard exists at any licensee's facility if the circuit breaker fails to operate. It is recommended the Licensees inspect the in-service components at the next convenient maintenance opportunity and components in stock prior to installation. The pin should protrude 0.26 ( +/- 0.02) inches out of both sides of the section of the latch bar assembly.

If the latch is installed on a K-Line circuit breaker, the latch can be inspected from the bottom side of the mechanism without disassembly.

"Questions concerning this notification should be directed to the Quality Manager at the Medium Voltage Service Center in Florence, SC at (843) 413-4782 or Fax (843) 413-4853."

HOO Note: See EN #51975 for Part 21 received from Prairie Island Nuclear Generating Station.

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June 3, 2016

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

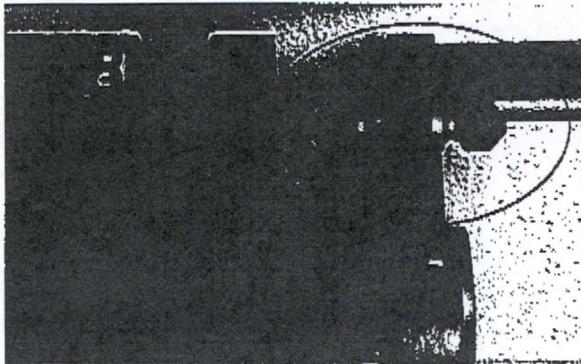
Subject: 10CFR Part 21 Notification of Deviation re. K-Line Circuit Breaker Secondary Trip Latch

1. This letter provides notification of a defect associated with the secondary trip latch, P/N: 716789E00, which is used in the 167710T01 & 167710T03 secondary latch bar assembly and assembly kit, respectively. These assemblies are used in low voltage K-Line 225-800 Amp and 1600-2000 Amp circuit breakers. The reported failure was caused by the pin in the secondary trip latch that the return spring attaches to not being installed properly. The pin hit the tab on the tripper bar when the latch returned to the reset position. This caused the breaker to trip open. This failure was reported by Xcel Energy Prairie Island Nuclear Plant and it is the only reported occurrence of a failure caused by the return spring pin being out of position. The secondary trip latch has been cast by the same since 1996. No other field failures or failures in the ABB Service facilities have been reported as a result of this pin being out of position. Information is provided as specified in 10CFR21 paragraph 21.21(d) (4).
2. Notifying individual: Andrew Wall, Vice President & General Manager, ABB (Electrification Products Medium Voltage Service US), 2300 Mechanicsville Road, Florence, SC 29501
3. Identification of the Subject component: ABB part numbers 716789E00 (secondary latch bar) and 167710T01 & 167710T03 (secondary latch bar assemblies). The secondary latch bar is available as an individual component and the secondary latch bar assemblies are utilized as components, as part of refurbishment kits, in K-Line operating mechanisms, in new K-Line breakers, and they may be replaced during a K-Line breaker refurbishment.
4. Nature of the deviation:

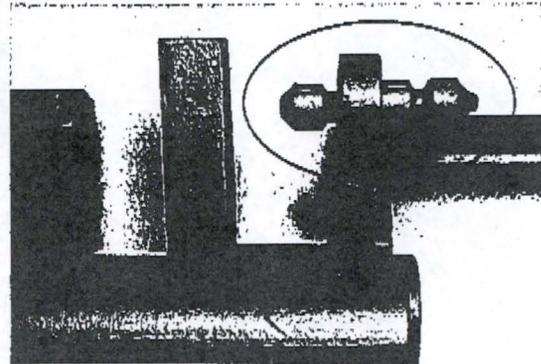
The pin that holds the return spring in place was not properly installed. The defect is believed to have occurred during the assembly process of the latch bar. The latch used in the Prairie Island Nuclear Plant circuit breaker was fabricated in 2013. Please see the photos below for an illustration of the correct, and incorrect, configuration of the pin installed in the secondary trip latch.

**ABB Inc.**

# ABB



Correct – pin is centered



Incorrect – pin is not centered

The subject breaker was returned to ABB for inspection and root cause analysis on 5/5/2016.

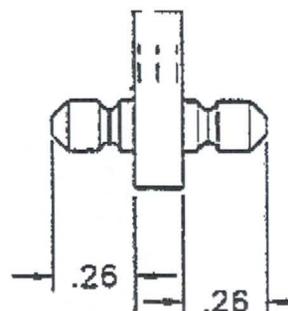
5. Corrective actions include:

- a. Quarantined and inspected P/N: 716789E00 and 167710T01/167710T03 assemblies in inventory. (Action complete)
- b. Notified vendor of the issue via the ABB Supplier Corrective Action Request process. (Action complete)
- c. Revised Critical Characteristic card for P/N: 716789E00 to incorporate measurement of the pin in question. (Action complete)
- d. Conducted training with QA and Operations personnel for awareness (Action complete)

6. Recommendations:

Because of the large potential variety of usages of the potentially affected circuit breakers, ABB (Medium Voltage Service) cannot determine if the potential for a substantial safety hazard exists at any licensee's facility if the circuit breaker fails to operate. It is recommended the Licensees inspect the in-service components at the next convenient maintenance opportunity and components in stock prior to installation.

The pin should protrude 0.26 (+/- 0.02) inches out of both sides of the section of the latch bar assembly. Please see the diagram below for a visual representation.



## ABB Inc.



If the latch is installed on a K-Line circuit breaker, the latch can be inspected from the bottom side of the mechanism without disassembly.

Questions concerning this notification should be directed to the Quality Manager at the Medium Voltage Service Center in Florence, SC at (843) 413-4782 or Fax (843) 413-4853.

Very truly yours,

A handwritten signature in black ink, appearing to read "Victor Romano", is written over the typed name.

Victor Romano  
Business Development Manager – Nuclear  
Service Training Manager  
Electrification Products Medium Voltage Service US

**ABB Inc.**

2300 Mechanicsville Road  
Florence, South Carolina 29501  
(843) 413-4700 – Office Phone  
(843) 413-4853 – Office Fax



# Fax

**To:** NRC Operations Center

**From:** David Brown

**Fax:** (301) 816-5151

**Pages:** 4

**Phone:** (301) 816-5100

**Date:** 6/3/2016

**Re:** 10 CFR Part 21 Notification

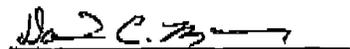
Urgent     For Review     Please Comment     Please Reply     Please Recycle

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• **Comments:**

ABB Florence is issuing a 10 CFR Part 21 notification for a defect. I will follow this fax up with a phone call to confirm receipt and an e-mail so as to provide a color copy of the imbedded photos.

Thank you,



[david.c.brown@us.abb.com](mailto:david.c.brown@us.abb.com)

(843) 413-4782 Work

(843) 496-8161 Cell

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