

Part 21 (PAR)

Event # 46807

Rep Org: ABB INC Supplier: ABB INC	Notification Date / Time: 05/02/2011 17:12 (EDT) Event Date / Time: 05/02/2011 (EDT) Last Modification: 09/28/2011
Region: 1 City: FLORENCE County: State: SC	Docket #: Agreement State: Yes License #:
NRC Notified by: DENNIS BATOVSKY HQ Ops Officer: BILL HUFFMAN Emergency Class: NON EMERGENCY 10 CFR Section: 21.21 UNSPECIFIED PARAGRAPH	Notifications: DEBORAH SEYMOUR R2DO PART 21 E-MAIL GROUP

NOTIFICATION OF POTENTIAL DEFECT IN SOLID STATE RELAY

Identification of the subject component is as follows: SS5 Solid State Relay, Part Number 611130-T13-N.

"The instantaneous trip function of the relay may actuate at 16 times normal current instead of the design value of 24 times normal current.

"On 3 March, 2011, ABB was notified by Progress Energy - Brunswick plant that spare relays being tested prior to being placed in service were tripping at approximately 4700 amps instead of the expected 7200 amps. Brunswick stated that their applications require having a short time delay for all faults up to the 24 times instantaneous value is critical for system design and compliance with their design basis and licensing documents.

"Subsequent evaluation by ABB Engineering determined that the relay works as intended. However, if there is a fault at the same time the relay is energized, the instantaneous unit becomes more sensitive, and will operate at lower than expected current level.

"For conditions where a fault occurs downstream of an associated in-service circuit breaker, the relay works as intended, for single phase, phase to phase, and three phase fault conditions.

"Sales records show that only four orders of the subject relay were ever shipped, and each of these four orders was with Progress Energy, with the orders all being processed via ABB Medium Voltage Service, in Florence, SC. The order numbers and quantities are as follows, with the first three orders being shipped from ABB Coral Springs, FL and the fourth order shipped from ABB Allentown, PA: AA027730 qty. 10, AA319168 qty. 7, AA319152 qty. 7, and PC06895 qty. 3.

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"ABB is taking, or has taken, the following corrective actions:

- Reworked Qty. 23 units for Brunswick to convert the units to Part Number 611130-T11-N, by removing the target circuit. This prevents the pre-mature trip at lower current.
- One additional unit has been retained at ABB Coral Springs to support continued testing to confirm the fault condition.
- Three units have not been accounted for, and are assumed to be in service. (Purchased by ABB Florence for Progress Energy Brunswick 4/11/08, Sales Order PC06895, Relay Serial Numbers 85948, 85949, and 85950)
- The 611130-T13-N relay has been obsoleted to prevent future sales.
- ABB Engineering is determining whether other similar relays of different ratings have a similar defect. Action to complete by July 1, 2011.

"ABB does not have the capability to perform the evaluation to determine if a defect exists, so we are informing the purchasers or affected licensees of this determination so that the purchasers or affected licensees may evaluate the deviation or failure to comply, pursuant to § 10CFR 21.21(a).

"ABB recommends that the affected licensees evaluate their specific application and determine whether the deviation described in this notice affects their design basis. If the licensee determines that it does, the relays may be returned to ABB for conversion by removing the target circuit."

*** UPDATE FROM DENNIS BATOVSKY TO JOE O'HARA AT 1529 ON 9/28/11 ***

This update information regarding the notification of a failure to comply with specifications associated with the SS5 Relay, Part Number 611130-T13-N.

"The instantaneous trip function of the relay may actuate at 16 times normal current instead of the design value of 24 times normal current.

"Subsequent evaluation by ABB Engineering determined that the relay works as intended. However, if there is a fault at the same time the relay is energized, the instantaneous unit becomes more sensitive, and will operate at lower than expected current level.

"For conditions where a fault occurs downstream of an associated in-service circuit breaker, the relay works as intended, for single phase, phase to phase, and three phase fault conditions.

"ABB Engineering determined that other similar relays of different ratings may have a similar deviation from technical specifications.

"ABB is taking, or has taken, the following corrective actions:

- Affected relay part numbers have been made obsolete to prevent future sales.
- Stopped production of all affected relays until corrective action is implemented.
- The Circuit board assembly, 611856-T1, T2, T3, will be made obsolete and replaced by 611857-T1, T2, T3 accordingly, which do not exhibit this deviation.
- ABB acknowledges the response time for this report is beyond the required reporting window and has initiated a separate corrective action to address this problem.

"ABB does not have the capability to perform the evaluation to determine if a defect exists, so we are informing the purchasers or affected licensees of this determination so that the purchasers or affected licensees may evaluate the deviation or failure to comply, pursuant to §10CFR 21.21 (a).

"ABB recommends that the affected licensees evaluate their specific application and determine whether the deviation described in this notice affects their design basis. If the licensee determines that it does, the licensee should contact ABB to determine appropriate corrective action."

Part 21 (PAR)
Notified R2DO(Nease) and Part 21 GRP via e-mail

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September 28, 2011

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

Subject: 10 C.F.R. Part 21 Notification of Potential Defect, Solid State Relays – Update of Previous Notification (reference: ML111250239)

Dear Sir or Madam:

This letter provides updated information regarding the notification of a failure to comply with specifications associated with the SS5 Relay, Part Number 611130-T13-N, previously submitted May 2, 2011.

The notifying individual is Mr. Dennis Batovsky, Managing Director, ABB Inc. (Protective Relay and Switches) 4300 Coral Ridge Drive, Coral Springs FL, 33065.

This update adds the following relays as subject components:

Type	Part Number	Type	Part Number
SS4	609901-K101-N	SS3	609902-T203-N
SS3G	609901-T106-N	SS5G	609902-T205-N
SS3G	609901-T106-NR	SS3G	609902-T206-N
SS4	609902-K101-N	SS3G	609902-T301-N
SS3	609902-K103-N	SS4G	609902-T304-N
SS3	609902-K203-N	SS4	609903-K101-N
SS4G	609902-T104-N	SS3G	609903-K106-N
SS4G	609902-T104-NR	SS4	609903-T201-N
SS3G	609902-T106-N	SS3	609903-T203-N
SS3G	609902-T106-NR	SS14	609903-T210-N
SS4	609902-T201-N	SS4	609905-T201-N

The instantaneous trip function of the relay may actuate at 16 times normal current instead of the design value of 24 times normal current.

As previously reported, ABB was notified by Progress Energy -- Brunswick plant ("Brunswick") that spare relays being tested prior to being placed in service were tripping at approximately 4700 amps instead of the expected 7200 amps. Brunswick stated that their applications require having a short time delay for all faults up to the 24 times instantaneous value is critical for system design and compliance with their design basis and licensing documents.

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Subsequent evaluation by ABB Engineering determined that the relay works as intended. However, if there is a fault at the same time the relay is energized, the instantaneous unit becomes more sensitive, and will operate at lower than expected current level.

For conditions where a fault occurs downstream of an associated in-service circuit breaker, the relay works as intended, for single phase, phase to phase, and three phase fault conditions.

ABB Engineering determined that other similar relays of different ratings may have a similar deviation from technical specifications.

ABB is taking, or has taken, the following corrective actions:

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- The Circuit board assembly, 611856-T1, T2, T3, will be made obsolete and replaced by 611857-T1, T2, T3 accordingly, which do not exhibit this deviation.
- ABB acknowledges the response time for this report is beyond the required reporting window and has initiated a separate corrective action to address this problem.

ABB does not have the capability to perform the evaluation to determine if a defect exists, so we are informing the purchasers or affected licensees of this determination so that the purchasers or affected licensees may evaluate the deviation or failure to comply, pursuant to §10CFR 21.21(a).

ABB recommends that the affected licensees evaluate their specific application and determine whether the deviation described in this notice affects their design basis. If the licensee determines that it does, the licensee should contact ABB to determine appropriate corrective action.

If you have any questions regarding this notice, please contact ABB Technical Support at 954-752-6700.

Very truly yours,


Dennis Batovsky

ABB Inc.