

Part 21 (PAR)

Event # 48851

Rep Org: ELECTROSWITCH		Notification Date / Time: 03/26/2013 09:01 (EDT)	
Supplier: ELECTROSWITCH		Event Date / Time: 03/26/2013 (EDT)	
Last Modification: 03/26/2013			
Region: 1	Docket #:		
City: WEYMOUTH	Agreement State:		Yes
County:	License #:		
State: MA			
NRC Notified by: LARRY FRIEDMAN	Notifications: GREG PICK	R4DO	
HQ Ops Officer: JOHN SHOEMAKER	DANIEL RICH	R2DO	
Emergency Class: NON EMERGENCY	PART 21 REACTORS	EMAIL	
10 CFR Section:	PAUL KROHN	R1DO	
21.21(d)(3)(i)	DEFECTS AND NONCOMPLIANCE		

PART 21 - SERIES 24 CSR RELAYS WITH OVERSIZED CAM DRIVE COMPONENTS

The following is a summary of a Part 21 report received from Electros witch, via facsimile:

"The root cause has been determined to be oversized OD dimension on the drive cam. This tight fit in the nylon bushing and mounting plate did not allow the drive cam to close when deenergized.

"NOTE: Any switches that have passed the bench test and/or are in operation will not degrade nor have the condition as found with the returned switches."

Affected Facilities: Waterford, Surry, and Harris.

IE19
NRR



180 King Avenue
Weymouth, MA 02188
Phone: 781-335-5200
Fax: 781-331-3798

Date: 3/26/13

Attention: NRC Operations Center Number of Pages: 9 (incl. cover)

Company: U.S. Nuclear Regulatory Commission

Fax #: 301-816-5151

From: Larry Friedman, QA Manager



ELECTROSWITCH • SWITCHES & RELAYS

UNIT OF ELECTRO SWITCH CORP.

180 King Avenue • Weymouth, MA 02188 • Phone 781-335-5200 • Fax 781-335-4253

March 25, 2013

U. S. Nuclear Regulatory Commission
NRC Operations Center
Facsimile # 301-816-5151

Subject: 10 CFR Part21 Reporting of Defects and Noncompliance
Electroswitch Report # 10CFR21-032513 Rev. 0

To whom it may concern:

The enclosed report addresses a reportable notification on an Electroswitch Series 24 CSR Relay assembly.

A copy of the report has been mailed to our affected nuclear customers.

Please sign below, acknowledging receipt of this report, and return a copy to the attention of Larry Friedman, Quality Assurance Manager, at the above address or fax to 781-335-4253 within 10 working days after receipt.

Sincerely,
ELECTROSWITCH

Larry Friedman
Quality Assurance Manager

Please let us know if ANY of your mailing information changes – name of recipient, name of company/facility, address, etc. Mark the changes on this acknowledgement form and send to us by mail to the address above or by FAX to 781-335-4253.

RECEIVED: _____

DATE: _____

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The following information is supplied in accordance with the requirements of 10 CFR Part 21.

A. Name and address of individual informing the Nuclear Regulatory Commission:

Larry Friedman – Quality Assurance Manager
Electroswitch
180 King Avenue
Weymouth, MA 02188

B. Identification of the basic component supplied which has a deviation (departure from the technical requirements included in the procure document):

The Series 24 CSR Relay (Electroswitch part # 88901LA, 88901LB, 88902LA, 88902LB, 88903LB, 88903LD, 88903LE) shipped to customers between January 16, 2006 and December 10, 2012.

C. Identification of the facility supplying the basic component which contains a deviation:

Electroswitch
180 King Avenue
Weymouth, MA 02188

D. Nature of the deviation:

The drive cam component (Electroswitch part #246-132A revision B) used in the above referenced Series 24 CSR Relays may potentially have an oversized OD dimension. The drawing did not specify whether the OD dimension was a before or after plating condition.

E. The date on which the information of such deviation was determined:

On the basis of our evaluation, it was determined on March 25, 2013 that Electroswitch does not have the capability to perform the evaluation to determine if a defect, which could create a substantial safety hazard, exists.

F. The number and location of all basic components which may contain the deviation:

Refer to Appendix A of this notification report.



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G. The evaluation and corrective action which has been taken to identify and correct the deviation:

Refer to Appendix B of this notification report.

H. Any advice related to the identified deviation about the basic component that has been, is being or will be given to purchasers:

Purchasers are being advised to perform testing to verify operation or return the product to Electroswitch.

The following personnel may be contacted regarding this notification:

Larry Friedman
Quality Assurance Manager
781-607-3309

Ed Reszenski
Engineering Manager
781-607-3341

Sincerely,

Larry Friedman
Quality Assurance Manager

cc: K. Lloyd
E. Reszenski


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Appendix A:

Customer	Location	Nuclear (Y/N)	Customer PO #	Electroswitch Order #	Qty Shpd	Part #	Item description	Shipment date	Note
Entergy	Waterford Plant, Hahnville, LA	Y	10106691	CO 359003	5	88901LA	SERIES 24CSR RELAY	1/16/2006	
Dominion	Surry Pwr Plant, Surry, VA	Y	45435289	CO 371488	2	88903LE	SERIES 24CSR RELAY	6/14/2006	
Entergy	Waterford Plant, Hahnville, LA	Y	10140147	CO 381335	1	88903LB	SERIES 24 CSR RELAY	1/9/2007	
Entergy	Waterford Plant, Hahnville, LA	Y	10142747	CO 383077	3	88902LA	SERIES 24CSR RELAY	2/26/2007	
Progress Energy	Harris Nuclear, New Hill, NC	Y	333606	CO 393964	2	88903LD	SERIES 24 CSR RELAY	10/12/2007	
Entergy	Waterford Plant, Hahnville, LA	Y	10178273	CO 401856	4	88901LA	SERIES 24CSR RELAY	4/8/2008	1 relay returned on 12/12/12
Entergy	Waterford Plant, Hahnville, LA	Y	10254506	CO 434993	1	88902LB	SERIES 24CSR RELAY	12/2/2009	
Entergy	Waterford Plant, Hahnville, LA	Y	10257083	CO 435924	4	88902LA	SERIES 24CSR RELAY	11/25/2009	
Entergy	Waterford Plant, Hahnville, LA	Y	10261733	CO 438037	4	88901LA	SERIES 24CSR RELAY	2/26/2010	1 relay returned on 12/12/12
Entergy	Waterford Plant, Hahnville, LA	Y	10278050	CO 444862	1	88902LA	SERIES 24CSR RELAY	6/30/2010	
Entergy	Waterford Plant, Hahnville, LA	Y	10325098	CO 470712	1	88902LA	SERIES 24CSR RELAY	10/17/2011	
Entergy	Waterford Plant, Hahnville, LA	Y	10325098	CO 475033	1	88903LB	SERIES 24 CSR RELAY	12/22/2011	
Entergy	Waterford Plant, Hahnville, LA	Y	10363312	CO 494372	1	88902LA	SERIES 24CSR RELAY	12/10/2012	

Electroswitch	NON CONFORMANCE REPORT	Rev: J	Document no: NONCON-1 CAR #13-002
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APPENDIX B

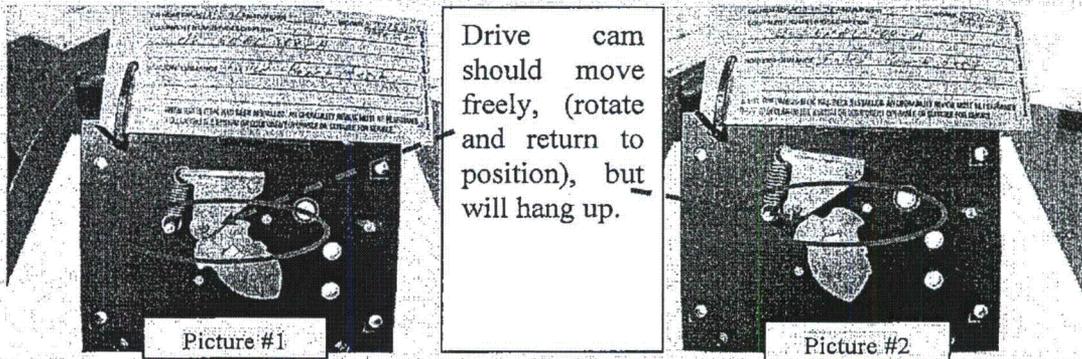
DATE: 11/28/12	REF. #: Entergy CAR #LO-CAR-2-12-00083	INITIATED BY: Larry Friedman
ITEM: 88901LA		
NONCONFORMANCE : <input type="checkbox"/> Audit	AREA: Customer complaint	

DESCRIPTION OF NON CONFORMANCE: (AS WRITTEN ON CUSTOMER CAR #LO-CAR-2012-00083)

“Relay SN108-I65410 failed a bench test with the following characteristics: Contact 11/13 initially closed when relay was de-energized; opened when energized but would not close again when de-energized. Another relay failed in a similar manner. The two relays were quarantined by Waterford 3 and will be sent back to Electroswitch under a Return Material Authorization (RMA).”

IMMEDIATE DISPOSITION/SHORT TERM FIX: (DUE WITHIN 10 WORKING DAYS OF FINDING)

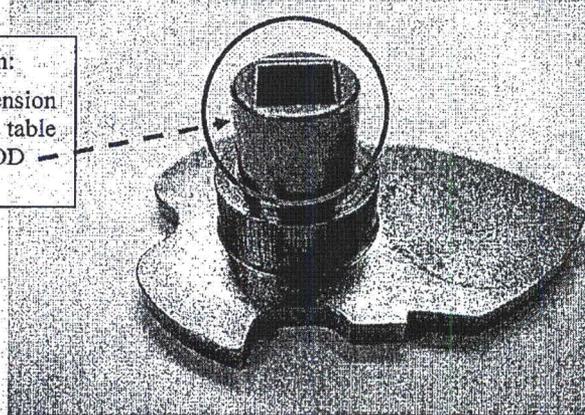
1. Immediate disposition once switch was returned on RA #4850:
 - a. Initial evaluation: Performed bench test to see if problem could be replicated. Results: Switches did initially close when relay was de-energized, open when energized and close when de-energized. Because the results did not replicate failure mode at customer, engineering was brought into evaluation.
 - b. Engineering evaluation: Performed bench test again. Results: Failure mode could be replicated when switch was kept energized for a short period of time (10 seconds).
 - c. Based upon the results, Engineering had recommended the drive cam portion of the drive assembly be checked for movement. Refer to picture #1 and #2 on page 2 of report.



* All blocks to be completed and legible – no pencil

Electroswitch	NON CONFORMANCE REPORT	Rev: J	Document no: NONCON-1 CAR #13-002
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Drive cam:
.4385 dimension
referenced in table
below is the OD



- d. Measured the three components which make up the drive cam assembly.

Component	Dimension specification	Actual dimension
Drive cam (after plating)	.4385 +.0000/-.0005	.4388 .4392
Drive cam (before plating)	.4380 +.0000/-.0005	.4381 .4385
Nylon bushing	.4385 +.001/-.000	.4390
Mounting plate	.5000 +.0000/-.0005	.5000

2. Researched shipment history. Found 3 shipments since 2008 –

Customer P.O. #	Electroswitch Order #	Quantity	Ship date
10178273	401856	4	4/8/08
10261733	438037	4	2/26/10

- a. These returned switches accounted for 1 switch from each of the above shipments. If there are any switches in Entergy's inventory that have not been placed in operation, Electroswitch will take them back to re-inspect and re-test.

3. Detailed review of the three component drawings is being performed by Engineering.

RESPONDED DATE: 1/7/13

DISPOSITIONED BY:
LARRY FRIEDMAN

* All blocks to be completed and legible – no pencil

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DEPARTMENT MGR

WHAT CAUSED THE NONCONFORMANCE? (ROOT CAUSE):

The root cause has been determined to be oversized OD dimension on the drive cam. This tight fit in the nylon bushing and mounting plate did not allow the drive cam to close when de-energized.

It was found, during the evaluation, that the drive cam drawing was not clear with respect to the OD dimension being such before or after plating.

NOTE: Any switches that have passed the bench test and/or are in operation will not degrade nor have the condition as found with the returned switches.

SIGNATURE: LARRY FRIEDMAN

ACTIONS TO PREVENT RECURRENCE (CORRECTIVE ACTION):

1. Engineering will be revising the drive cam drawing (see table below):
 - a. The OD specification on the drive cam will be revised.
 - b. The plating specification on the drive cam will be revised.
 - i. The plating specification changed from .0004 max to .0003 max.

Component	Original dimension specification	Revised dimension specification
Drive cam (after plating)	.4385 +.0000/-.0005	.4386 max
Drive cam (before plating)	.4380 +.0000/-.0005	.4380 +.0000/-.0002
Nylon bushing	.4385 +.001/-.000	Same
Mounting plate	.5000 +.0000/-.0005	Same

 - c. With these changes, the stack up tolerance, which may have caused a restriction in movement, will be eliminated.
2. Test procedure will be revised to keep switch energized for 10 seconds

Preventive Action Report Reference # (Where Applicable):

ASSIGNED TO: * Larry Friedman / Al MacLean DUE DATE: 1/24/13

SIGNATURE AT COMPLETION: LARRY FRIEDMAN / AL MACLEAN DATE: 1/24/13

* All blocks to be completed and legible – no pencil

Electroswitch	NON CONFORMANCE REPORT	Rev: J	Document no: NONCON-1 CAR #13-002
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Q
M

CLOSE OUT DETAILS (REVIEW EFFECTIVENESS OF ACTIONS TAKEN):

1. Quality will monitor all future production runs of this switch to ensure this type of discrepancy does not reoccur.
2. ECN #30431, which revises drive cam specifications, issued on 2/15/13.

SIGNATURE:
Larry Friedman

DATE:
2/26/13

A
N
Y

COMMENTS:

It is noted that Electroswitch does not have the capability to perform the evaluation to determine if a defect exists and Electroswitch will inform the purchasers.

* All blocks to be completed and legible – no pencil