

Part 21 (PAR)

Event # 51915

<b>Rep Org:</b> ELECTROSWITCH	<b>Notification Date / Time:</b> 05/10/2016 15:59 (EDT)
<b>Supplier:</b> ELECTROSWITCH	<b>Event Date / Time:</b> 05/10/2016 (EDT)
	<b>Last Modification:</b> 08/25/2016
<b>Region:</b> 1	<b>Docket #:</b> 99900833
<b>City:</b> WEYMOUTH	<b>Agreement State:</b> Yes
<b>County:</b>	<b>License #:</b>
<b>State:</b> MA	
<b>NRC Notified by:</b> LARRY FRIEDMAN	<b>Notifications:</b> ART BURRITT R1DO
<b>HQ Ops Officer:</b> BETHANY CECERE	JAMIE HEISSERER R2DO
<b>Emergency Class:</b> NON EMERGENCY	ERIC DUNCAN R3DO
<b>10 CFR Section:</b>	VIVIAN CAMPBELL R4DO
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE	PART 21/50.55 REACTORS EMAIL

## PART 21 REPORTING OF DEFECTS AND NONCOMPLIANCE

The following is a synopsis of information received via fax:

"Various Electros witch products - Series 24 Instrument & Control (Part #24XX, 24XXX, 243XX, 74XXX), Series 24 LOR (part #78XX), Series 24 LOR/ER (part #78XX), Series 24 CSR (part #88XX), Series 24 LSR (part #92XX), Series 31 Instrument & Control (part #31XXX, 65XXX, 75XXX), Series 31 TR/LSR (part #93XX), Series 20 Cam (part #20KB, 20KD, 20LB, 20LD, 20MB, 20MD, 20MF, 20MG, 20PF, 20PG, 20PH, 20PJ, 20PL, 20PY), Series 20 Module (part #10XXX, 17XXX, 18XXX, 19XXX, 29XXX, 30XXX, 32XXX, 38XXX, 40XXX, 60XXX, 61XXX, 62XXX, 63XXX) [have a potential deviation (departure from the technical requirements included in the procure document)]

"It was determined on May 10, 2016 that Electros witch does not have the capability to perform the evaluation to determine if a defect, which could create a substantial safety hazard, exists.

"Any Electros witch product that has a part number listed above and was sold as a Safety-Related Class 1E product [may contain the deviation].

The two nonconformance issues are:

"Initial Product Qualification Tests for Dielectric Withstanding Voltage, Insulation Resistance and Contact Resistance as defined in Electros witch's ESC-STD-1000 Rev. 3 dated 9/3/1984 General Specifications for Rotary Switches and Auxiliary Relays for Utility Applications including Class 1E Equipment for Nuclear Power Generating Stations was found to be in contradiction to IEEE C37.90-1978 Relays and Relay Systems Associated with Electric Power Apparatus.

IE19  
NRR

"Electroswitch did not procure materials, parts, equipment and/or services from an Appendix B supplier nor were applicable Commercial Grade Surveys, Source Inspections and Material Analyses performed for the following materials:

- Precious metal blade overlay material
- Red metal blade material
- Precious metal overlay thickness of switch blade material
- Molding compound of switch insulators (terminal decks and barriers)
- Carbon steel for securing rods
- Solenoids
- Relays
- Services (test labs) pertaining to product qualification

Electroswitch is attempting to determine which NRC licensees are potentially affected.

"The following personnel may be contacted regarding this notification:

Larry Friedman  
Quality Assurance Manager  
781-607-3309

Ed Reszenski  
Engineering Manager  
781-607-3341"

\*\*\* UPDATE FROM LARRY FRIEDMAN TO DONALD NORWOOD AT 1656 EDT ON 5/11/2016 \*\*\*

The following information was received via fax:

Below is the list of utilities (and plants where specified) which were notified of Electroswitch's decision to end the Appendix B Quality Assurance Program:

- Ameren Energy
- Dominion Energy
- Duke Energy
- Energy Northwest
- Entergy Nuclear (Waterford 3 Nuclear)
- Entergy Nuclear (Pilgrim Power Plant)
- Entergy Nuclear (Indian Point Energy)
- Xcel Energy (Monticello Nuclear)
- MPR Associates for FPL
- Nebraska Public Power (Cooper Nuclear)
- Nextera (Point Beach Nuclear)
- Xcel Energy (Prairie Island Gen)
- Southern Power (Hatch)

Southern Power (Vogtle)

TVA

TVA (Watts Bar Nuclear)

Wolf Creek Nuclear

Notified R1DO (Burritt), R2DO (Heisserer), R3DO (Duncan) and R4DO (Campbell) and via E-mail Part 21/50.55 Reactors Group.

\*\*\* UPDATE FROM LARRY FRIEDMAN TO DONG HWA PARK AT 1617 EDT ON 8/25/2016 \*\*\*

The following information was received via fax:

"Electroswitch is formally requesting a thirty (30) day extension to complete the evaluation by Sept. 24, 2016 in order to provide detailed answers to the questions and provide any needed updates to the Part 21 notification report."

Notified R1DO (Dimitriadis), R2DO (Michel), R3DO (Cameron) and R4DO (Kellar) and Part 21/50.55 Reactors Group via E-mail.

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

Date: August 25, 2016

Attention: **NRC Operations Center**

# of Pages: 4 (including cover)

Company: U. S. Nuclear Regulatory Commission

Fax #: 301-816-5151

From: Larry Friedman  
Quality Assurance Manager

Phone: 781-607-3309

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Attached is a Request for Extension for Interim Part 21 to address the notice of nonconformance from the Vendor Inspection of Electroswitch Corporation Report No. 99900833/2016-201.

Reference: Event #51915



**ELECTROSWITCH • SWITCHES & RELAYS**  
UNIT OF ELECTRO SWITCH CORP.

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

August 25, 2016

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

Subject: Request for Thirty (30) Day Extension for Interim Part 21 Report

Reference: 10 CFR Part21 Reporting of Defects and Noncompliance - Vendor Inspection of Electroswitch Corporation Docket #99900833 (Event #51915)

To Whom It May Concern:

Electroswitch is formally requesting a thirty (30) day extension to complete the evaluation by Sept. 24, 2016 in order to provide detailed answers to the questions and provide any needed updates to the Part 21 notification report.

Electroswitch had opened a formal Interim Part 21 Report to address the notice of nonconformance from the Vendor Inspection of Electroswitch Corporation Report No. 99900833/2016-201. The nonconformances were:

NON 99900833/2016-201-01: Criterion III, Design Control, of 10CFR50 Appendix B in part states "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled."

Electroswitch's ESC-STD-1000 Rev. 3 dated 9/3/1984 General Specifications for Rotary Switches and Auxiliary Relays for Utility Applications including Class 1E Equipment for Nuclear Power Generating Stations states the following:

1. Dielectric Withstanding Voltage – 2200VRMS, 60Hz for one minute with a maximum of 100 microamps leakage initially and 600VRMS, 60Hz for one minute with a maximum of 100 milliamps after aging.
  - a. This is contrary to contrary to IEEE C37.90-1978 Relays and Relay Systems Associated with Electric Power Apparatus.
2. Insulation Resistance – 100 megohms minimum at 500VDC for one minute and 50 megohms minimum at 500VDC for one minute after endurance and aging.
  - a. This is contrary to paragraph 3.8 of ESC-STD-1000 Rev. 3 dated 9/3/1984, which states 100 megohms minimum.

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3. Contact Resistance – 10 milliohms maximum at rated current and 10 milliohms at 100 milliamps after endurance.
  - a. This is contrary to paragraph 3.9 of ESC-STD-1000 Rev. 3 dated 9/3/1984, which states 10 milliohms maximum at rated current.

NON 99900833/2016-201-02: Criterion III, Design Control, of 10CFR50 Appendix B in part states "Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components."

Electroswitch did not procure materials, parts, equipment and/or services from an Appendix B supplier nor were applicable Commercial Grade Surveys, Source Inspections and Material analyses performed for the following materials:

- Precious metal blade overlay material
- Red metal blade material
- Precious metal overlay thickness of switch blade material
- Molding compound of switch insulators
- Carbon steel for securing rods
- Solenoids
- Relays
- Services pertaining to product qualification

Electroswitch had submitted formal corrective action reports (CAR #16-010 and CAR #16-011) to the NRC and to the affected utilities. The NRC had reviewed the documents and have subsequently asked questions related to the responses (reference letter from Terry Jackson dated August 5, 2016). In addition, a request by the NRC was to provide additional technical details for the descriptions of both findings and an updated list of affected utilities, if need be, to the Part 21 notification report.

Electroswitch has continued to respond to direct questions from the utilities during this evaluation.

Please sign below, acknowledging receipt of this request, 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



**ELECTROSWITCH • SWITCHES & RELAYS**

UNIT OF ELECTRO SWITCH CORP.

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

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: \_\_\_\_\_