

Part 21 (PAR)

Event # 51816

<b>Rep Org:</b> UNITED CONTROLS INTERNATIONAL		<b>Notification Date / Time:</b> 03/22/2016 15:11 (EDT)	
<b>Supplier:</b> MERSEN		<b>Event Date / Time:</b> 02/20/2016 (EDT)	
<b>Last Modification:</b> 03/22/2016			
<b>Region:</b> 1	<b>Docket #:</b>		
<b>City:</b> NORCROSS	<b>Agreement State:</b> Yes		
<b>County:</b>	<b>License #:</b>		
<b>State:</b> GA			
<b>NRC Notified by:</b> KORINA LOOFT		<b>Notifications:</b> ROBERT DALEY R3DO	
<b>HQ Ops Officer:</b> DONG HWA PARK		PART 21/50.55 REACTORS EMAIL	
<b>Emergency Class:</b> NON EMERGENCY			
<b>10 CFR Section:</b>			
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE			

PART 21 REPORT - DEFECTIVE FUSES

The following information is a synopsis of information received via E-mail:

"On February 20, 2016 United Controls International issued a Return Material Authorization (RMA) request to First Energy - Perry Nuclear Power Plant. The RMA was issued to request the return of general purpose fuses of part number OT15 that were provided to First Energy - Perry Nuclear Power Plant under purchase order 45225736. The customer identified a fuse that had intermittent electrical continuity during resistance checks. The customer performed an evaluation which included dissection of the subject fuse and the cause of the issue was identified as being due to a lack of or inadequate solder connection of the fuse element to the fuse ferrules.

"If you have any questions or wish to discuss this matter or this report, please contact:  
 Wesley Hickle  
 Engineering Manager  
 whickle@unitedcontrols.com  
 770-496-1406 x 165"

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IE19  
NRR



## 10CFR21 NOTIFICATION LETTER

March 22, 2016

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington D.C. 20555-0001

Subject: 10CFR21 Notification for Mersen (formerly Ferraz Shawmut) OT15 Fuses

The purpose of this letter is to provide the NRC with a report in general conformity of the requirements of 10CFR Part 21.21. On February 20, 2016 United Controls International issued a Return Material Authorization (RMA) request to First Energy – Perry Nuclear Power Plant. The RMA was issued to request the return of general purpose fuses of part number OT15 that were provided to First Energy – Perry Nuclear Power Plant under purchase order 45225736. The customer identified a fuse that had intermittent electrical continuity during resistance checks. The customer performed an evaluation which included dissection of the subject fuse and the cause of the issue was identified as being due to a lack of or inadequate solder connection of the fuse element to the fuse ferrules.

The cause of the failure identified has been attributed to manufacturing error and United Controls International (UCI) is attempting to work with the manufacturer (Mersen) in identifying the root cause and obtaining assurances that replication of this issue will not occur in their current manufacturing process. The subject fuse was supplied to the customer on March 30, 2007 and was of manufacturer lot code FP22-66. UCI and the customer have dissected fuses from the following additional manufacturing lot codes and have not identified any suspect fuses: FP22-55 (4), FP22-66 (2), FP22-70 (1), ND76-16 (1), ND86-34 (2), ND88-34 (1). UCI currently considers this issue to be an isolated event as no previous instances of this failure have been observed and dissection of additional fuses of the same part number and from the same manufacturer lot have provided no additional supporting evidence that the manufacturing error identified was a recurring event. In addition, dissection of fuses from additional and more recent manufacturer lots have not provided indication of manufacturing error. First Energy – Perry Nuclear Power Plant has returned the suspect fuse and additional dissected fuses to UCI for further evaluation.

UCI notified First Energy – Perry Nuclear Power Plant on February 20, 2016 that the Qty. 22 fuses provided under purchase order 45225736 were to be returned to UCI for further evaluation. First Energy – Perry Nuclear Power Plant has returned Qty. 9 dissected fuses to date.



Required information as per 10CFR Part 21.21(d)(4) follows:

**(i) Name and Address of the individual or individuals informing the Commission**

Rob Hale  
 President  
 United Controls International  
 205 Scientific Drive  
 Norcross, GA 30092

**(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.**

Mersen (formerly Ferraz Shawmut) 15 A, 250 VAC, 250 VDC, class K-5, UL standard 248-9, general purpose fuse of part number OT15 was found to have a lack of or inadequate solder connection of fuse element to fuse ferrule.

**(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.**

United Controls International  
 205 Scientific Drive  
 Norcross, GA 30092

**(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.**

Inability of the fuse to carry its design basis load current may result in impairment of downstream safety-related equipment function. In addition, inability of the fuse to interrupt current during an overload condition may result in degradation of the host 1E circuit.

**(v) The date on which the information of such defect or failure to comply was obtained.**

February 20, 2016

**(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured or being manufactured for one or more facilities or activities subject to the regulations in this Part.**

Part Number	Utility	Purchase Order	Quantity
OT15	First Energy – Perry Nuclear Power Plant	45225736	22
		45370174	24
		45465726	12
		45489950	36



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- (vii) ***The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.***

UCI is attempting to work with the manufacturer (Mersen) in identifying possible causes of this issue in their manufacturing process so as to mitigate the possibility of reoccurrence of this issue. UCI has implemented additional inspections of the subject fuses during the dedication process to verify that there is no looseness in the ferrule caps when twisted and to make note of any intermittent readings during our fuse resistance testing. Due to unresponsiveness from the manufacturer, a time line for manufacturing process analyzation cannot be determined. UCI has implemented the additional inspection processes described above for the latest shipment under purchase order 45489950 and suspect fuses identified were segregated, dissected and the solder connections were examined and determined to be sufficient.

- (viii) ***Any Advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.***

During inspection of ferrule type fuses, the ferrule should be inspected for any movement and attention to intermittent fuse resistance reading shall be given as a possible indication of inadequate soldered connection.

- (ix) ***In the case of an early site permit, the entities to whom an early site permit was transferred.***

Not Applicable.

If you have any questions or wish to discuss this matter or this report, please contact:

Wesley Hickle  
Engineering Manager  
[whickle@unitedcontrols.com](mailto:whickle@unitedcontrols.com)  
770-496-1406 x 165

Sincerely,

A handwritten signature in black ink that reads "Rob Hale". The signature is written in a cursive, slightly slanted style.

Rob Hale  
President  
United Controls International