Part 21 (PAR) Event # 50025

Rep Org:	CAMERON MEASUREMENT SYSTEMS	**Notification Date / Time:**	04/10/2014 20:21 (EDT)
Supplier:	CAMERON MEASUREMENT SYSTEMS	**Event Date / Time:**	04/10/2014 (PDT)
		Last Modification:	04/10/2014
Region:	4	**Docket #:**	
City:	INDUSTRY	**Agreement State:**	Yes
County:		**License #:**	
State:	CA		
NRC Notified by:	CHUCK ROGERS	**Notifications:**	RAY POWELL R1DO
HQ Ops Officer:	CHARLES TEAL		MALCOLM WIDMANN R2DO
Emergency Class:	NON EMERGENCY		PATTY PELKE R3DO
10 CFR Section:			JAMES DRAKE R4DO
21.21(d)(3)(i)	DEFECTS AND NONCOMPLIANCE		PART 21 GROUP EMAIL

PART 21 - BARTON MODEL 288A AND 289A DIFFERENTIAL PRESSURE SWITCH DEFECT

Cameron Measurement Systems is reporting a defect affecting versions of the Barton Model 288A and 289A differential pressure indicating switches and spare switch assemblies for these products. The defect being reported is an out of specification concentricity issue with the roller that actuates the switches. This represents a switch setpoint repeatability concern.

Any additional safety significant issues that might be identified in our ongoing investigation will be addressed in subsequent advisories that will be published. If you have any questions please contact Chuck Rogers, Director of Quality and Safety, at (281) 582-9507 or Jim Greer, Engineering Manager, at (800) 291-3550.

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IE19
NRR

Measurement Systems

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CAMERON

April 10, 2014

SUBJECT: Notification of Defect

Cameron Measurement Systems, at 4040 Capitol Ave in the City of Industry, CA 90601, is a supplier of basic components to the commercial nuclear power industry. The components of concern for this Advisory are nuclear qualified versions of the Barton Model 288A and 289A Differential Pressure Indicating Switches and spare switch assemblies for these products. The defect being reported is an out of specification concentricity issue with the roller that actuates the switches which represents a switch setpoint repeatability concern.

The attached Product Advisory describes the defect, its applicability and the recommended remedial action. A subsequent Advisory will be provided to address any additional issues that may be identified in our investigation, if applicable.

We are currently in the process of procuring conforming parts and anticipate the ability to repair instruments in the near future. This repair will necessitate factory activity to remove and replace the out of specification roller, recalibrate the instruments and subject them to the customer defined cleaning process before they can be returned.

Best regards,

Signed on behalf of
Chuck Rogers
by
Jim Hay

Chuck Rogers
Director, Quality & Safety
Cameron Measurement Systems
281-582-9507 (w)
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CAMERON Measurement Systems

PRODUCT ADVISORY

Model 288A and 289A Differential Pressure Switch Defect

DATE OF ISSUE: April 10, 2014 DOCUMENT NO.: 210036966.01

ATTENTION: This Advisory is being made in accordance with requirements of 10 CFR Part 21 Reporting of Defects and Noncompliance. If you have Barton Model 288A or 289A Differential Pressure Indicating Switches or spare switch assemblies for these products shipped from the Cameron factory please read the following notice in its entirety.

Cameron Measurement Systems, at 4040 Capitol Ave in the City of Industry, CA 90601, is a supplier of basic components to the commercial nuclear power industry. The components of concern for this Advisory are nuclear qualified versions of the Barton Model 288A and 289A Differential Pressure Indicating Switches and spare switch assemblies (P/Ns listed on page 2) for these products. The defect being reported is an out of specification concentricity issue with the roller that actuates the switches which represents a switch setpoint repeatability concern.

During the investigation of an apparent setpoint drift issue on Model 289A Indicating Switches at an operating nuclear power plant, Cameron uncovered an out-of-specification concentricity issue with the switch actuator roller that rides on the switch operating cam. No other utilities have reported a similar issue.

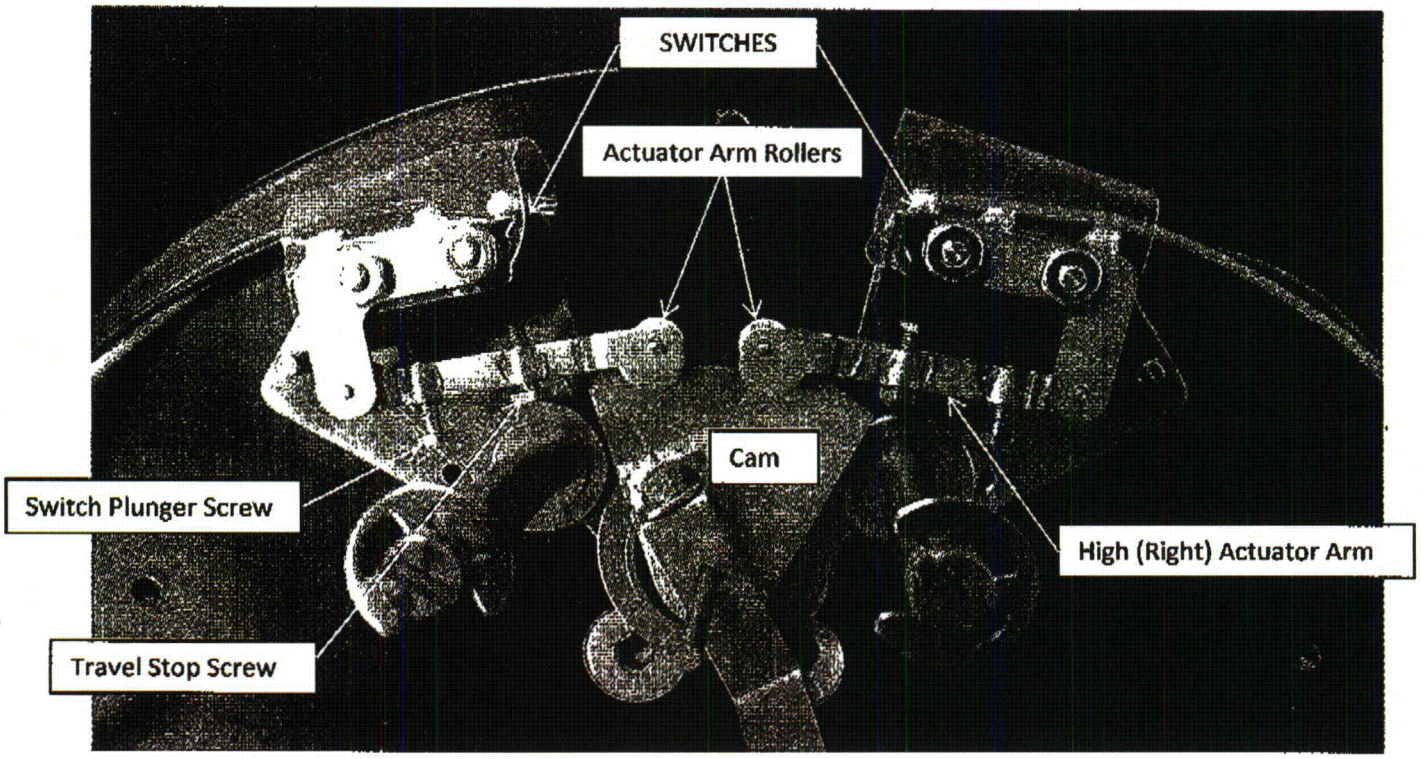
With the nonconforming rollers, a switch can still operate within the repeatability specification of 0.25% as long as the roller radial position remains the same when at the switch trip position. However, if the radial position of the roller changes (due to vibration, multiple fluctuations in the sensed differential pressure that causes the roller to move off and on the cam high point, etc.) then the switch can trip at a different value. Based on a sample of approximately 100 rollers inspected, a maximum repeatability error in the neighborhood of 2% has been observed. It is expected that the tolerance would be cyclical if the roller moves to new positions, with both increasing and decreasing values recorded over time.

Due to the nature of this concentricity issue, it warrants immediate notification so that appropriate utility evaluation and remedial action can be implemented. Until such time that final reviews of the above utility identified setpoint drift concern are completed, Cameron recommends that utilities perform increased switch setpoint verifications especially where historical records indicate repeatability issues.

This defect may affect Cameron manufactured Barton Model 288A and 289A instruments and replacement switch assemblies shipped from the factory between December 30, 2010 to March 25, 2014.

While the identified concentricity issue is considered a significant factor it is not considered to be the sole root cause of the utility reported situation and we are actively investigating other potential contributing factors to the above utility setpoint drift issue.

Any additional safety significant issues that might be identified in our ongoing investigation will be addressed in subsequent Advisories that will be published. If you have any questions please contact Chuck Rogers, Director of Quality and Safety, at (281) 582-9507 or Jim Geer, Engineering Manager, at (800) 291-3550.



MODEL 288A/289A SWITCH OPERATING MECHANISM MOCKUP

REPLACEMENT SWITCH & PLATE ASSEMBLY PART NUMBERS

P/N	Description
Dual & Single SPDT Switches (Full Functional Qualified Configurations)	
9A-CS666-0135Z-N	Low Switch (#1, Left)
9A-CS666-0137Z-N	High Switch (#2, Right)
Dual & Single DPDT Switches (Qualification Limited to Structural / Pressure Boundary Integrity Applications)	
9A-CS401-0110Z	Low Switch (Left)
9A-CS401-0113Z	High Switch (Right)
Dual & Single Relay Switches (Qualification Limited to Structural / Pressure Boundary Integrity Applications)	
9A-CS666-0189Z	Low Switch (Left)
9A-CS666-0196Z	High Switch (Right)
3 & 4 Independently Adjustable Switches (Qualification Limited to Structural / Pressure Boundary Integrity Applications)	
9A-CS666-0135Z	Low Switch (#1, Upper Left)
9A-CS666-0137Z	High Switch (#2, Upper Right)
9A-CS666-0136Z	Low Switch (#3, Lower Right)
9A-CS666-0138Z	High Switch (#4, Lower Left)