

General Information or Other (PAR)

Event # 46085

Rep Org: ROSEMOUNT NUCLEAR INSTRUMENTS, INC.		Notification Date / Time: 07/12/2010 10:57 (EDT)	
Supplier: ROSEMOUNT NUCLEAR INSTRUMENTS, INC.		Event Date / Time: 07/12/2010 (CDT)	
Last Modification: 07/12/2010			
Region: 3	Docket #:		
City: CHANHASSEN	Agreement State:		Yes
County:	License #:		
State: MN			
NRC Notified by: DUYEN PHAM		Notifications: TAMARA BLOOMER	R3DO
HQ Ops Officer: STEVE SANDIN		JUDY JOUSTRA	R1DO
Emergency Class: NON EMERGENCY		PART 21 via email	
10 CFR Section:			
21.21	UNSPECIFIED PARAGRAPH		

PART 21 REPORT FOR CERTAIN MODEL 3051N PRESSURE TRANSMITTERS

Pursuant to 10 CFR Part 21, section 21.21 (b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform you that a limited number of Model 3051N pressure transmitters listed in the attachment may exhibit non-linear and non-repeatable performance. The affected transmitters were shipped from RNII between August 12, 2002 and September 27, 2006.

1.0 Name and address of the individual providing the information;

Mr. Marc D. Bumgarner
 Vice President & General Manager
 Rosemount Nuclear Instruments, Inc.
 8200 Market Boulevard
 Chanhassen, MN 55317

2.0 Identification of items supplied:

Certain Model 3051N pressure transmitters identified in the attachment.

3.0 Identification of firm supplying the item:

Rosemount Nuclear Instruments, Inc.
 8200 Market Boulevard
 Chanhassen, MN 55317

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 NRR

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Event # 46085

4.0 Nature of the failure and potential safety hazard;

The Model 3051N Smart Pressure Transmitter is dedicated for nuclear use consistent with the requirements of 10 CFR Part 21. It is qualified for use in safety related applications per IEEE 323-1983 (mild environment) and IEEE 344-1987 for seismic applications as documented in its associated qualification reports.

Procurement and production records indicate that 53 Model 3051N pressure transmitters (Ranges 1, 2 and 3) manufactured between August 2002 and September 2006 have sensor module castings that were not solution annealed, and therefore may contain elevated levels of hydrogen in the sensor module fill fluid. Solution annealing is a heat treatment process for castings. It is used to homogenize the casting by reducing any segregated elements that include carbon, which can greatly reduce corrosion resistance. This process also reduces the level of mobile hydrogen in the casting to a point where out gassing is no longer a reliability concern.

Elevated levels of hydrogen in the sensor module casting can create a reliability concern because mobile hydrogen can diffuse through the metal into the sensor module fill fluid and may eventually reach gas solubility limits of the fill fluid. When this occurs, gas vapor bubbles may form, primarily under vacuum process conditions, resulting in a sensor output shift. A transmitter with hydrogen bubbles in the sensor module fill fluid will announce itself by exhibiting non-linear and non-repeatable performance.

To date, RNII has not received any 3051N field returns for this issue. However, there have been two confirmed failures related to this issue on a commercially available Rosemount product using the identical sensor module casting. Additionally, there have been other confirmed failures related to this issue on a commercially available Rosemount product using a similar, but not identical casting. These commercial grade product returns prompted additional internal testing and analysis that indicated a potential reliability concern on 3051N transmitters that were manufactured with non-solution annealed module castings.

As a result, a thorough evaluation was completed and a notification about the potential substantial safety hazard identified on 7/1/10 is being made in accordance with 10 CFR Part 21 to customers that purchased a 3051N pressure transmitter from the potentially affected population.

5.0 The corrective action which is taken, the name of the individual or organization responsible for that action, and the length of time taken to complete that action:

-The last shipment of a 3051N transmitter With a non-solution annealed sensor module casting was September 2006.

- Following September 2006, all sensor module castings utilized on the 3051N have been solution annealed.

- Procurement drawings for the module castings have been reviewed and the requirement to solution anneal all module castings for a model 3051N transmitter has been verified.

- Model 3051N pressure transmitters affected by this notification may be returned to RNII for replacement at no charge.

6.0 Any advice related to the potential failure of the item:

The end user is advised to determine the impact of this potential reliability issue upon its plant's operation and safety, and take action as deemed necessary. Affected transmitters may be returned to RNII for replacement at no charge.

Rosemount Nuclear Instruments, Inc. is committed to the nuclear industry and remains dedicated to the supply of high quality products to our customers. If you have any questions, or require additional information related to this issue, please contact: [REDACTED].

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The attachment provided with this notification identified pressure transmitters delivered to the following power plants: Vermont Yankee (U.S.), Krsko (Slovenia), Santa Marie de Garona (Spain), Kuosheng Nuclear Power Station (Taiwan), and Ulchin 5 and 6 facilities (Korea).
