

Part 21 (PAR)

Event # 47693

<b>Rep Org:</b> ROSEMOUNT NUCLEAR		<b>Notification Date / Time:</b> 02/23/2012 11:08 (EST)	
<b>Supplier:</b> ROSEMOUNT NUCLEAR		<b>Event Date / Time:</b> 02/16/2012 (CST)	
		<b>Last Modification:</b> 02/23/2012	
<b>Region:</b> 3		<b>Docket #:</b>	
<b>City:</b> CHANHASSEN		<b>Agreement State:</b> Yes	
<b>County:</b>		<b>License #:</b>	
<b>State:</b> MN			
<b>NRC Notified by:</b> DUYEN PHAM		<b>Notifications:</b> MEL GRAY R1DO	
<b>HQ Ops Officer:</b> VINCE KLCO		MIKE ERNSTES R2DO	
<b>Emergency Class:</b> NON EMERGENCY		PATTY PELKE R3DO	
<b>10 CFR Section:</b>		RICK DEESE R4DO	
21.21 UNSPECIFIED PARAGRAPH		PART 21 GRP - EMAIL	

~~!!! This is a draft document, do not release to the public !!!~~

PART 21 REPORT - ROSEMOUNT PRESSURE TRANSMITTERS WITH NONZERO BASED CALIBRATIONS

The following information was received by facsimile:

"During the course of qualification testing to replace certain diodes identified for obsolescence, RNII [Rosemount Nuclear Instruments, Inc.] has determined that Model 1154 Series H range code 4-8 pressure transmitters with a significantly elevated or suppressed 4 mA point may not meet the published steam pressure/temperature accuracy specification.

"The out of tolerance condition observed during steam pressure/temperature qualification testing is not related to the replacement diode changes. It is an inherent performance characteristic related to large zero elevation or suppression.

"The steam pressure/temperature accuracy specification will be revised to account for nonzero based calibrations with a significantly elevated or suppressed 4 mA point.

"This revised specification supersedes the published steam pressure/temperature accuracy specification for all Model 1154 Series H pressure transmitters affected by this notification.

"RNII recommends that users review the application where 1154 Series H range code 4-8 pressure transmitters are used to determine if there are safety considerations related to the revised steam pressure/temperature specification."

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Part 21 (PAR)

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Rosemount Nuclear has provided instruments to the following list of domestic U.S. customers: Alabama Power; American Electric Power; Arizona Public Service/Pinnacle West; Bechtel Power; Constellation Energy; Dominion Nuclear Connecticut/Dominion Generation; Duke Energy; ECFS MCS; Edison Material Supply; Electro Mechanics; Entergy; Exelon Generation; Florida Power and Light; FPL Energy; Georgia Power; Northern States Power-Minnesota DBA XCEL Energy; Pacific Gas and Electric; Progress Energy Florida; Progress Energy Carolinas; PSEG Nuclear; South Carolina Electric and Gas; Southern California Edison; Southern Nuclear Operating Company; STP Nuclear Operating; Tennessee Valley Authority; TXU/Luminant; Westinghouse Electric.

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## Facsimile

No. of Pages: 8  
*Including cover page*

To: NRC Operations Center

Fax Number: (301) 816-5151

Date: Thursday, February 23, 2012

From: Duyen Pham, Quality  
Manager

Phone: (952) 949-5363

E-Mail: [Duyen.Pham@Emerson.com](mailto:Duyen.Pham@Emerson.com)

Subject: Notification under 10 CFR Part 21 on certain Rosemount Model 1154 Series  
H Pressure Transmitters with nonzero based calibrations

Rosemount Nuclear Instruments, Inc. is submitting the attached notification as required by 10 CFR Part 21. Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Duyen Pham".

Duyen Pham  
Quality Manager  
Rosemount Nuclear Instruments, Inc.

# **ROSEMOUNT®**

## **Nuclear**

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23 February 2012

U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Attn: Document Control Desk

**Re: Notification under 10 CFR Part 21 on certain Rosemount Model 1154 Series H Pressure Transmitters with nonzero based calibrations**

Pursuant to 10 CFR Part 21, section 21.21(b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform you that certain Model 1154 Series H pressure transmitters may not perform within the published steam pressure/temperature accuracy specification.

Rosemount Nuclear Instruments, Inc. does not have complete information relating to specific plant applications and therefore cannot determine the potential effects of the condition on plant operation.

The potentially affected Model 1154 Series H pressure transmitters were shipped from RNII beginning in 1988. Model 1154 pressure transmitters (versus Model 1154 Series H) are not affected by this notification.

**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:**

All Model 1154 Series H range code 4-8 pressure transmitters shipped since the initial release in 1988 are potentially affected. Model 1154 Series H range code 9 pressure transmitters are not affected, nor are Model 1154 (versus Model 1154 Series H) transmitters.

More detailed information can be found in the enclosed appendices.

- Appendix A lists 1154 model code combinations
- Appendix B lists N-options Specials with Specific Steam Pressure/Temperature Accuracy Specifications
- Appendix C lists U.S. domestic customers to which Rosemount Nuclear Instruments, Inc. has shipped one or more 1154 Series H range code 4-8 pressure transmitters

### 3.0 Identification of Items supplied:

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

### 4.0 Nature of the failure and potential safety hazard:

During the course of qualification testing to replace certain diodes identified for obsolescence, RNII has determined that Model 1154 Series H range code 4-8 pressure transmitters with a significantly elevated or suppressed 4 mA point may not meet the published steam pressure/temperature accuracy specification.

The out of tolerance condition observed during steam pressure/temperature qualification testing is not related to the replacement diode changes. It is an inherent performance characteristic related to large zero elevation or suppression.

The steam pressure/temperature accuracy specification will be revised to account for nonzero based calibrations with a significantly elevated or suppressed 4 mA point.

Currently, the Model 1154 Series H steam pressure/temperature specification establishes an expected accuracy as follows:

Accuracy within  $\pm$  (1.0% of upper range limit + 1.0% of span) for range codes 4-8;  $\pm$  (2.0% of upper range limit + 0.5% of span) for range code 9 during and after sequential exposure to steam at the following temperatures and pressures, concurrent with chemical spray for the first 24 hours.

420°F (215.6°C), 85 psig for 3 minutes  
350°F (176.6°C), 85 psig for 7 minutes  
320°F (160°C), 85 psig for 8 hours  
265°F (129.4°C), 85 psig for 56 hours

The Model 1154 Series H steam pressure/temperature accuracy specification will be revised to envelop the observed steam pressure/temperature qualification test data as follows:

Accuracy within  $\pm$  (1.0% of upper range limit + 1.0% of span)\* for range codes 4-8;  $\pm$  (2.0% of upper range limit + 0.5% of span) for range code 9 during and after sequential exposure to steam at the following temperatures and pressures, concurrent with chemical spray for the first 24 hours.

420°F (215.6°C), 85 psig for 3 minutes  
350°F (176.6°C), 85 psig for 7 minutes  
320°F (160°C), 85 psig for 8 hours  
265°F (129.4°C), 85 psig for 56 hours

\* For range codes 4-8, if pressure at the 4mA point (applied to either the high or low side of the transmitter) is greater than 50% of the upper range limit, the accuracy specification is  $\pm$  2% of upper range limit.

This revised specification supersedes the published steam pressure/temperature accuracy specification for all Model 1154 Series H pressure transmitters affected by this notification.

The 1154 Series H range code 9 pressure transmitters have a steam pressure/temperature accuracy specification that already envelopes the observed steam pressure/temperature qualification test data and are not affected by this notification.

Model 1154 Series H pressure transmitters ordered with N-option specials which include specific steam pressure/temperature accuracy specifications may also be affected. See Appendix B for details.

On February 16, 2012, it was concluded that a substantial safety hazard may exist. Rosemount Nuclear Instruments, Inc. does not have sufficient information to determine the potential safety impact in plant applications. As a result, a notification about the potential substantial safety hazard is being made in accordance with 10 CFR Part 21 to customers who purchased affected 1154 Series H pressure transmitters.

**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:**

- (a) Update Model 1154 Series H Qualification Report D8700096 to include the revised steam pressure/temperature specification for pressure transmitters impacted by this notification as noted in Section 4.0.
- (b) Update the Model 1154 Series H Product Data Sheet 00813-0100-4631 and Product Manual 00809-0100-4631 to include the revised steam pressure/temperature specification for pressure transmitters impacted by this notification as noted in Section 4.0.
- (c) Update the N0059 Specification Drawing 01154-2704 to include the revised steam pressure/temperature specification for pressure transmitters impacted by this notification as noted in Appendix B.

Completion: March 2012

Mr. Marc Bumgarner, VP&GM of Rosemount Nuclear Instruments, Inc. is responsible for any further action related to this issue.

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

RNII recommends that users review the application where 1154 Series H range code 4-8 pressure transmitters are used to determine if there are safety considerations related to the revised steam pressure/temperature specification.

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: Mike Dougherty (208) 865-1112 or Tracy Kaluzniak (952) 949-7159.

Sincerely,

A handwritten signature in black ink, appearing to read "MD Bumgarner", followed by a horizontal line.

Marc D. Bumgarner  
Vice President & General Manager  
Rosemount Nuclear Instruments, Inc.

Enc.: Appendix A: Model Code Combinations

Appendix B: N-option Specials with Specific Steam Pressure/Temperature Accuracy  
Specifications

Appendix C: List of Customers

## Appendix A: Model Code Combinations

Potentially affected model codes begin with the following:

Base Model	Description
1154DH4...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154DH5...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154DH6...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154DH7...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154DH7...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154DH8...	1154 Series H Differential Pressure 2000 psig Static Pressure Rating
1154HH4...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating
1154HH5...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating
1154HH6...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating
1154HH7...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating
1154HH7...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating
1154HH8...	1154 Series H Differential Pressure 3000 psig Static Pressure Rating

Unaffected model codes begin with the following:

Base Model	Notes
1154SH9...	1154 Series H Sealed Reference Pressure
1154DP...	1154 Differential Pressure 2000 psig Static Pressure Rating
1154HP...	1154 Differential Pressure 3000 psig Static Pressure Rating
1154GP...	1154 Gage Pressure



## Appendix B: N-option Specials with Specific Steam Pressure/Temperature Accuracy Specifications

N-option (RNII drawing reference)	Description	Steam Pressure/Temperature Accuracy Specification	Notes
N0059 (01154-2704)	Defines the use of a Model 1154DH8RB with a sealed reference on the low side.	$\pm(1.5\%URL+1\%span)$	Is affected by this notification. The revised steam pressure/temperature accuracy specification is $\pm(2\% URL + 1\% span)$ when the 4 mA point is greater than 50% of URL.
N0026 (01153-2725)	Defines the use of an 1154 Series H range code 4 pressure transmitter calibrated to a maximum working pressure of 210 In. H <sub>2</sub> O.	$\pm 5.50 \text{ InH}_2\text{O}$	Not affected by this notification
N0079 (01153-2758)	Variant of the N0026 option with a vent/drain valve kit consisting of two threaded SST valve seats and two SST valve stems.		
N0087 (01154-2712)	Variant of the N0026 option with the electronic housing rotated 180 degrees.		
N0089 (01154-2714)	Variant of the N0026 option with the electronic housing rotated 90 degrees in the clockwise direction.		
N0060 (01154-2705)	Defines the use of a range code 9 module for a calibration range of 0 – 4000 psi.	$\pm(3\%URL+1\%span)$	Not affected by this notification
N0110 (01154-2725)	Defines the use of a range code 9 module for a calibration range of 0 – 4000 psi with adjustable damping.	$\pm(3\%URL+1\%span)$	Not affected by this notification

## Appendix C: List of Customers

Domestic U.S. Customers
ALABAMA POWER CO
AMERICAN ELECTRIC POWER CO INC
ARIZONA PUBLIC SERVICE CO/PINNACLE WEST CAPITAL
BECHTEL POWER CORP
CONSTELLATION ENERGY GROUP INC
DOMINION NUCLEAR CONNETICUT INC/DOMINION GENERATION
DUKE ENERGY CORP
ECFS MCS
EDISON MATERIAL SUPPLY LLC
ELECTRO MECHANICS
ENERGY CORP
EXELON GENERATION CO LLC
FLORIDA POWER AND LIGHT CO
FPL ENERGY LLC
GEORGIA POWER CO
NORTHERN STATES POWER - MINNESOTA DBA XCEL ENERGY
PACIFIC GAS AND ELECTRIC COMPANY
PROGRESS ENERGY FLORIDA INC
PROGRESS ENERGY CAROLINAS INC
PSEG NUCLEAR LLC
SOUTH CAROLINA ELECTRIC & GAS
SOUTHERN CALIFORNIA EDISON CO
SOUTHERN NUCLEAR OPERATING COMPANY
STP NUCLEAR OPERATING CO
TENNESSEE VALLEY AUTHORITY
TXU/LUMINANT GENERATION CO LLC
WESTINGHOUSE ELECTRIC CO LLC