

Part 21 (PAR)

Event # 47246

Rep Org: ROSEMOUNT NUCLEAR INSTRUMENTS	Notification Date / Time: 09/06/2011 15:59 (EDT)
Supplier: ROSEMOUNT NUCLEAR INSTRUMENTS	Event Date / Time: 08/30/2011 (CDT)
	Last Modification: 09/06/2011
Region: 3	Docket #:
City: CHANHASSEN	Agreement State: Yes
County:	License #:
State: MN	
NRC Notified by: DUYEN PHAM	Notifications: TODD JACKSON R1DO
HQ Ops Officer: BILL HUFFMAN	DANIEL RICH R2DO
Emergency Class: NON EMERGENCY	JAMES DRAKE R4DO
10 CFR Section:	CHRISTINE LIPA R3DO
21.21 UNSPECIFIED PARAGRAPH	PART 21 E-MAIL GROUP

NOTIFICATION THAT CERTAIN ROSEMOUNT PRESSURE TRANSMITTERS MAY NOT PERFORM THEIR INTENDED SAFETY FUNCTION

The following is a summary of a Part 21 notification was received from Rosemount via facsimile:

"Re: Notification under 10 CFR Part 21 on certain Rosemount Model 1153 Series B, 1154 and 1164 Series H Pressure Transmitters

"Pursuant to 10 CFR Part 21, section 21.21(b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform [the NRC] that one (1) Model 1153 Series B, fourteen (14) Model 1154, and twenty (20) Model 1154 Series H pressure transmitters may not perform their intended safety function.

"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 thirty-five (35) potentially affected Model 1153 Series B, 1154, and 1154 Series H pressure transmitters were shipped from RNII between April 19, 2011 and August 12, 2011. [The list of Plant Sites that have received the affected transmitters is provided at the end of this report.]

"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.

"Identification of items supplied:

"One (1) Model 1153 Series B, fourteen (14) Model 1154, and twenty (20) Model 1154 Series H potentially affected units have been shipped.

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"Identification of firm supplying the item:

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

"Nature of the failure and potential safety hazard:

"On each Model 1153 Series B, 1154, and 1154 Series H transmitter, four diodes are used on a circuit card assembly which is installed within the welded sensor module subassembly. These diodes convert the AC oscillator signal to a DC current proportional to the pressure applied to the sensor. The diodes (P/N DZ911218A) are manufactured by Microsemi Corporation (MSC).

"Recently an unexpected drop in yield was identified during electrical testing of the circuit card assembly. A hold was placed on production to further investigate the issue. It was determined that the drop in yield was caused by intermittent open diodes on the circuit card assembly. Failure of one diode will result in an off-scale failure of transmitter output. Failure of two or more diodes may result in an on-scale failure of transmitter output.

"MSC determined that the intermittent open electrical failures were the result of a poor solder bond formation within the diode at the cathode lead. This was caused by either inadequate heat flow or surface contamination during the component manufacturing process.

"Working with MSC, RNII used material traceability data to confirm the potential problem was limited to one manufacturer's lot code of the diode. RNII was then able to utilize material traceability data to further identify the specific shipped transmitters affected by this notification.

"On August 30, 2011, it was concluded that a substantial safety hazard may exist. Rosemount Nuclear Instruments, Inc. does not have sufficient information to determine the safety impact related to the potentially anomalous output 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 one or more of the thirty-five (35) potentially affected Model 1153 Series B, 1154, or 1154 Series H pressure transmitters.

"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) RNII held shipments of completed Model 1153 Series B, 1154, and 1154 Series H transmitters and determined which specific units were assembled with diodes from the suspect lot code.

"(b) RNII quarantined all Model 1153 Series B, 1154, and 1154 Series H transmitters and sub-assemblies in manufacturing while a determination was made as to which specific units were assembled with diodes from the suspect lot code.

"(c) RNII worked with the diode supplier (MSC) to determine the root cause and identify the suspect lot code. Since this part is no longer being manufactured by MSC, no corrective actions were implemented at MSC.

"(d) RNII is in the process of reworking all unshipped Model 1153 Series B, 1154, and 1154 Series H transmitters and subassemblies that were completed or in manufacturing that contained diodes from the suspect lot code.

"(e) Potentially affected pressure transmitters can be returned and reworked at the factory at the end user's request.

"(f) RNII is qualifying a substitute diode to replace the obsolete DZ911218A diode. The qualification is expected to be complete within the next six months. This qualification will be documented in an update to the Model 1153 Series B, 1154, and 1154 Series H qualification reports

"Any advice related to the potential failure of the Item:

"RNII recommends that users review the application where any of the thirty-five (35) potentially affected Model

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1153 Series B, 1154 and 1154 Series H transmitters are used to determine any safety considerations in the operation of the plant. RNII recommends that potentially affected transmitters be returned to RNII for rework at the end user's earliest opportunity."

List of Affected Sites:

U.S Facilities

- Calvert Cliffs -5 Transmitters
- Oconee -2 Transmitters
- San Onofre -1 Transmitter
- River Bend -2 Transmitters
- Waterford -1 Transmitter
- Diablo Canyon -1 Transmitter
- Farley -4 Transmitters

Foreign Facilities

- Shin Kori -1 Transmitter
- Ringhals -3 Transmitters
- Fuqing -4 Transmitters
- Fangjishan -4 Transmitters
- Yangjiang -4 Transmitters
- Tihange -1 Transmitter
- Asco II / Vandellos II -3 Transmitters



ROSEMOUNT
Nuclear

8200 Market Boulevard
Chanhassen, MN 55317 USA

Tel 1 (952) 949-5210
Fax 1 (952) 949-5201

Facsimile

No. of Pages: 17
Including cover page

To: NRC Operations Center **Fax Number:** (301) 816-5151

Company:

Date: Tuesday, September 6th, 2011

From: Duyen Pham, Quality Manager **Phone:** (952) 949-5363

E-Mail: Duyen.Pham@Emerson.com

Subject: **Notification under 10 CFR Part 21 on certain Rosemount Model 1153 Series B, 1154 and 1154 Series H Pressure Transmitters**

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,

Duyen Pham
Quality Manager
Rosemount Nuclear Instruments, Inc.

9/16/11
Re faxing. Did not receive a fax confirmation,
ykt. D.P.



Rosemount Nuclear Instruments, Inc.
8200 Market Boulevard
Chanhausen, MN 55317 USA

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Fax: 1 (952) 949-5201
www.RosemountNuclear.com

06 September 2011

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

Re: Notification under 10 CFR Part 21 on certain Rosemount Model 1153 Series B, 1154 and 1154 Series H Pressure Transmitters

Pursuant to 10 CFR Part 21, section 21.21(b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform you that one (1) Model 1153 Series B, fourteen (14) Model 1154, and twenty (20) Model 1154 Series H pressure transmitters may not perform their intended safety function.

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 thirty-five (35) potentially affected Model 1153 Series B, 1154, and 1154 Series H pressure transmitters were shipped from RNII between April 19, 2011 and August 12, 2011.

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
Chanhausen, MN 55317

2.0 Identification of items supplied:

One (1) Model 1153 Series B, fourteen (14) Model 1154, and twenty (20) Model 1154 Series H potentially affected units have been shipped. See the enclosed Attachment A for the list of these thirty-five (35) transmitters shipped by customer and/or plant site.

3.0 Identification of firm supplying the item:

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

4.0 Nature of the failure and potential safety hazard:

On each Model 1153 Series B, 1154, and 1154 Series H transmitter, four diodes are used on a circuit card assembly which is installed within the welded sensor module sub-assembly. These diodes convert the AC oscillator signal to a DC current proportional to

the pressure applied to the sensor. The diodes (P/N DZ911218A) are manufactured by Microsemi Corporation (MSC).

Recently an unexpected drop in yield was identified during electrical testing of the circuit card assembly. A hold was placed on production to further investigate the issue. It was determined that the drop in yield was caused by intermittent open diodes on the circuit card assembly. Failure of one diode will result in an off-scale failure of transmitter output. Failure of two or more diodes may result in an on-scale failure of transmitter output.

MSC determined that the intermittent open electrical failures were the result of a poor solder bond formation within the diode at the cathode lead. This was caused by either inadequate heat flow or surface contamination during the component manufacturing process.

Working with MSC, RNII used material traceability data to confirm the potential problem was limited to one manufacturer's lot code of the diode. RNII was then able to utilize material traceability data to further identify the specific shipped transmitters affected by this notification.

On August 30, 2011, it was concluded that a substantial safety hazard may exist. Rosemount Nuclear Instruments, Inc. does not have sufficient information to determine the safety impact related to the potentially anomalous output 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 one or more of the thirty-five (35) potentially affected Model 1153 Series B, 1154, or 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) RNII held shipments of completed Model 1153 Series B, 1154, and 1154 Series H transmitters and determined which specific units were assembled with diodes from the suspect lot code.
- (b) RNII quarantined all Model 1153 Series B, 1154, and 1154 Series H transmitters and sub-assemblies in manufacturing while a determination was made as to which specific units were assembled with diodes from the suspect lot code.
- (c) RNII worked with the diode supplier (MSC) to determine the root cause and identify the suspect lot code. Since this part is no longer being manufactured by MSC, no corrective actions were implemented at MSC.
- (d) RNII is in the process of reworking all unshipped Model 1153 Series B, 1154, and 1154 Series H transmitters and subassemblies that were completed or in manufacturing that contained diodes from the suspect lot code.
- (e) Potentially affected pressure transmitters can be returned and reworked at the factory at the end user's request.
- (f) RNII is qualifying a substitute diode to replace the obsolete DZ911218A diode. The qualification is expected to be complete within the next six months. This qualification

will be documented in an update to the Model 1153 Series B, 1154, and 1154 Series H qualification reports.

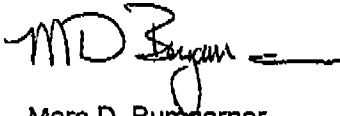
Mr. Marc Bumgarner, VP&GM of Rosemount Nuclear Instruments, Inc. is responsible for any further action related to this issue.

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

RNII recommends that users review the application where any of the thirty-five (35) potentially affected Model 1153 Series B, 1154 and 1154 Series H transmitters are used to determine any safety considerations in the operation of the plant. RNII recommends that potentially affected transmitters be returned to RNII for rework at the end user's earliest opportunity.

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,



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

Enc.: Attachment A – List of Affected Transmitters by Company Name and/or Plant Site

**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
CONSTELLATION ENERGY GROUP INC**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3052851	432256	1154DP5RC	0544060	7-Jun-11	CALVERT CLIFF NUCLEAR POWER PLANT INC
3052851	432256	1154DP5RC	0544061	7-Jun-11	CALVERT CLIFF NUCLEAR POWER PLANT INC
3052851	432256	1154DP5RC	0544062	7-Jun-11	CALVERT CLIFF NUCLEAR POWER PLANT INC
3063381	432246	1154HH5RCN0011	0544056	15-Jun-11	CALVERT CLIFF NUCLEAR POWER PLANT INC
3063381	432246	1154HH5RCN0011	0544057	15-Jun-11	CALVERT CLIFF NUCLEAR POWER PLANT INC

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**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
DUKE ENERGY CAROLINAS LLC**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3048416	00143867	1154DP5RB	0543802	9-May-11	OCONEE NUCLEAR STATION
3048416	00143867	1154DP5RB	0543803	9-May-11	OCONEE NUCLEAR STATION

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**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EDISON MATERIAL SUPPLY LLC**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3072699	4500397305	1154DH5RAN0011	0544096	13-Jun-11	SAN ONOFRE NUCLEAR GENERATING STATION

ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EMERSON PROCESS MANAGEMENT AB

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3055811	46989079	1154DP5RC	0544312	30-Jun-11	RINGHALS NUCLEAR POWER STATION
3055811	46989079	1154DP5RC	0544313	30-Jun-11	RINGHALS NUCLEAR POWER STATION
3055811	46989079	1154DP5RC	0544314	30-Jun-11	RINGHALS NUCLEAR POWER STATION

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ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.**EMERSON PROCESS MANAGEMENT ASIA PACIFIC PTE LTD**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
2597488	HP 80805199/CP1	1154DH5RAN0167	0543641	20-May-11	FUQING
2597488	HP 80805199/CP1	1154DH5RAN0167	0543642	20-May-11	FUQING
2597488	HP 80805199/CP1	1154DH5RAN0167	0543643	20-May-11	FUQING
2597488	HP 80805199/CP1	1154DH5RAN0172	0543650	20-May-11	FUQING

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ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EMERSON PROCESS MANAGEMENT ASIA PACIFIC PTE LTD

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
2597497	HP 80805206/CP1	1154DH5RAN0167	0543697	20-May-11	FANGJISHAN
2597497	HP 80805206/CP2	1154DH5RAN0167	0543698	20-May-11	FANGJISHAN
2597497	HP 80805206/CP3	1154DH5RAN0167	0543699	20-May-11	FANGJISHAN
2597497	HP 80805206/CP4	1154DH5RAN0172	0543710	20-May-11	FANGJISHAN

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ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EMERSON PROCESS MANAGEMENT ASIA PACIFIC PTE LTD

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
2626350	HP 80805673/CPB	1154DH5RAN0152	0543560	20-Apr-11	YANGJIANG
2626350	HP 80805673/CPB	1154DH5RAN0152	0543561	20-Apr-11	YANGJIANG
2626350	HP 80805673/CPB	1154DH5RAN0152	0543558	20-Apr-11	YANGJIANG
2626350	HP 80805673/CPB	1154DH5RAN0152	0543559	20-Apr-11	YANGJIANG

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**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EMERSON PROCESS MANAGEMENT NV SA**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3036646	3239042	1154HP5RCN0096	0543827	25-May-11	TIHANGE

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**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
EMERSON PROCESS MANAGEMENT SL**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
2595531	35014658	1154SH9RAN0060	0543795	14-Jun-11	ASCO II / VANDELLOS II
2595531	35014658	1154SH9RAN0061	0543797	14-Jun-11	ASCO II / VANDELLOS II
2595531	35014658	1154SH9RAN0062	0543798	14-Jun-11	ASCO II / VANDELLOS II

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**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
ENTERGY OPERATIONS INC**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3084741	10315334	1153DB5PCN0016	0544302	12-Aug-11	RIVERBEND NUCLEAR STATION
3084741	10315334	1153DB5PCN0016	0544303	12-Aug-11	RIVERBEND NUCLEAR STATION
3069060	10312980	1154DP5RCN0012	0543654	19-Apr-11	WATERFORD 3 NUCLEAR

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ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
PACIFIC GAS AND ELECTRIC CO

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3052849	3500892008	1154DH5RC	0543822	12-May-11	DIABLO CANYON

**ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.
SOUTHERN NUCLEAR OPERATING CO INC**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3034520	QP110105/001	1154DP5RA	0543725	27-Apr-11	FARLEY NUCLEAR PLANT
3034520	QP110105/001	1154DP5RA	0543726	27-Apr-11	FARLEY NUCLEAR PLANT
3034520	QP110105/001	1154DP5RA	0543820	9-May-11	FARLEY NUCLEAR PLANT
3034520	QP110105/001	1154DP5RA	0543821	9-May-11	FARLEY NUCLEAR PLANT

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ATTACHMENT: 10 CFR Part 21 Notification - 06 SEPTEMBER 2011.**WESTINGHOUSE**

Sales Order	Purchase Order Number	Model Number	Serial Number	Ship Date	Site
3065873	4500385592	1154HH5RB	0543715	17-Jun-11	SHIN KORI UNIT 1