Rosemount Nuclear Instruments

Rosemount Nuclear Instruments, Inc.
12001 Technology Drive
Eden Prairie, MN 55344 USA
Tel 1 (612) 828-8252
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September 20, 1996

Re: Notification under 10 CFR Part 21 for Model 353C and 353C1 Conduit Seals

Pursuant to 10CFR Part 21 Paragraph 21.21(b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform you of a potential nonconformance related to certain model 353C and 353C1 nuclear qualified conduit seals. (Model 353C and 353C1 are identical in construction except for the leadwire length). The nonconformance was the failure of RNII standard manufacturing acceptance tests to identify production units containing a short condition.

Model 353C Conduit Seals are designed to supply an absolute barrier between the electrical connections of a pressure transmitter and the external environment typical of nuclear power plants. Model 353C and 353C1 Conduit Seals incorporate a glass-to-metal feed through header assembly used to separate the transmitter and the external environment. Two 22 gage insulated shielded leadwires are used and terminate at both sides of the header assembly. A conduit case is used to hold the header and is filled with epoxy to maintain the separation of the leadwires.

RNII has become aware of two model 353C conduit seals received by a user in an output short condition. The units were not installed in a plant process but exhibited the short condition during functional tests at the user's location prior to installation. The two units were returned to RNII for root cause failure analysis. The failure analysis confirmed the short condition and determined the short was caused by contact between the outlet end leadwires internal to the conduit case. Because the outlet end leadwires are encased in epoxy we concluded that contact between the leadwires occurred during manufacturing processes.

RNII completes two standard functional tests on 100% of model 353C and 353C1 production units. The tests measure continuity of the leadwires, and insulation resistance between each leadwire and between each leadwire to the conduit case. Any unit exhibiting a short condition would be identified by these tests.

RNII concludes that the continuity test and the insulation resistance test were either completed incorrectly or not completed for these two units.

RNII is notifying users of 353C and 353C1 conduit seals of a potential nonconformance in the acceptance testing completed on 100% of production units. If the conduit seal has successfully completed a functional test, this notification is not applicable.

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Part 21

1.0 Name and address of the individual providing the information:

Mr. Mark Van Sloun
Vice President & General Manager
Rosemount Nuclear Instruments, Inc.
12001 Technology Drive
Eden Prairie, MN 55344

2.0 Identification of items supplied:

Model 353C and 353C1 Conduit Seals

3.0 Identification of firm supplying the item:

Rosemount Nuclear Instruments, Inc.
12001 Technology Drive
Eden Prairie, MN 55344

4.0 Nature of the failure and potential safety hazard:

This notification relates to Model 353C and 353C1 conduit seals which exhibit a short condition. Any model 353C and 353C1 conduit seal which does not indicate a short condition is deemed acceptable and this notification is not applicable to such units. Also this notification is not applicable to units which have successfully completed a functional test.

RNII does not have sufficient information to determine the safety impact related to plant applications. Licensees must determine the impact on plant operations and plant safety and take action as deemed necessary.

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:

RNII has identified that the nonconformance was due to failure of manufacturing functional tests to identify model 353C and 353C1 conduit seals in a short condition prior to shipment.

RNII recommends that all users of 353C and 353C1 conduit seals complete an Insulation Resistance (IR) Test, or other equivalent test which will identify a short output condition, on all conduit seals which are not currently operational (e.g. maintained in stores or as spare/replacements). If an IR test will be used, the test should be completed between the two leadwires and from each leadwire to the conduit case. Acceptance criteria is a minimum IR of 100 megohms at 100 V dc.

If you locate a conduit seal in a short condition, please contact Tim Layer at (612) 828-8240. The unit will be replaced at no charge.

RNII internal corrective actions are summarized as follows:

1. Review Continuity Test and IR Test procedures for clarity. Complete refresher operator training.
2. Add an independent Quality Assurance Inspection step in the manufacturing process to re-test the IR of 100% of production units prior to release.

The above actions will be completed within 60 days of this notification.

No further action related to this issue is expected. Mr. Van Sloun is responsible should any further action related to this issue be necessary.

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

This notification applies to 353C and 353C1 conduit seals which have not completed an acceptance test by the user. Standard plant procedures for acceptance testing and installing RNII transmitter - conduit seals should be sufficient to identify this potential defect and no further action is recommended.

The end user must determine the full scope of this nonconformance as it relates to plant operations and plant safety and take action as deemed necessary.

Rosemount Nuclear Instruments, Inc. has a strong commitment to the nuclear industry and assures you that we are dedicated to the supply of high quality products and services to our customers. We are sorry for any inconvenience. If there are any questions, or you require additional information related to this issue, please contact Tim Layer (612) 828-8240, Jane Sandstrom or Ian Baldry (612) 828-8250.

Sincerely,

ROSEMOUNT NUCLEAR INSTRUMENTS, INC.

M L Van Sloun

M. L. Van Sloun
Vice President & General Manager

MVS:TJL