

NOTICE OF NONCONFORMANCE

Rosemount, Incorporated

Docket No.: 99900271

Report No.: 93-01

Based on the results of a U.S. Nuclear Regulatory Commission (NRC) inspection conducted at the Rosemount, Incorporated (Rosemount), facilities from February 1-4, 1993, and March 8-12, 1993, it appears that certain of your activities were not conducted in accordance with NRC requirements.

- A. Criterion II, "Quality Assurance Program," of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 requires, in part, that the quality assurance (QA) program shall provide controls over activities affecting the quality of components to an extent consistent with their importance to safety. The program shall take into account the need for verification of quality by inspection and test.

Criterion V, "Instructions, Procedures, and Drawings," of Appendix B to 10 CFR Part 50 requires, in part, that activities affecting quality be prescribed by appropriate instructions, procedures or drawings and be accomplished according to those instructions, procedures or drawings.

Criterion VII, "Control of Purchased Material, Equipment, and Services," of Appendix B to 10 CFR Part 50 requires, in part, that measures shall be established to assure that purchased material, equipment, and services conform to the procurement documents.

Section 2, "Quality Assurance Program," of Rosemount's Nuclear Quality Manual (NQM), D9000115, Revision A, which replaced Rosemount Quality Assurance Manual 1742 for nuclear and corporate procedures pertaining to quality, states, in part, that "The design, manufacturing and servicing of the Measurement Division nuclear products shall be managed in accordance with a comprehensive Nuclear Quality Program. The Nuclear Quality Program shall be structured to comply with the provisions of 10 CFR 50, Appendix B, NQA-1, applicable industry standards, and Company Policies...."

Section 5, "Instructions, Procedures, and Drawings," of Rosemount's NQM states, in part, that "Activities that affect quality shall be prescribed by clear and complete documented procedures and instructions of a type appropriate to the circumstances and shall be accomplished in accordance with these documents... Procedures shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished...."

Section 10, "Inspection," of the Rosemount NQM states, in part, that "Inspection shall be performed on activities affecting quality to verify conformance with related drawings, specifications, and other controlled documents...."

Contrary to these requirements, as of March 12, 1993, the NRC inspection team identified the following nonconformances:

1. Rosemount did not establish QA program procedures, instructions, or drawings to control activities affecting quality in its Failure Analysis (FA) Laboratory. (93-01-04)
2. Rosemount did not establish an overall Appendix B to 10 CFR Part 50 QA program for the control of "basic components" manufactured in its Chanhassen facility. Although Rosemount provided its Chanhassen facility with Nuclear Department approved drawings and procedures for certain of its activities, other activities were not adequately controlled or performed. (93-01-05)
3. Rosemount did not implement the receipt inspection requirements delineated in Section 2.5, "Dedication," of Nuclear Department Procedure (NDP) N-0730, "Dedication of Subassemblies from Chanhassen," for the sensor cells used in all of its safety-related nuclear transmitters. (93-01-06)

- B. Criterion III, "Design Control," of Appendix B to 10 CFR Part 50 requires, in part, that measures shall be established to assure that the design basis for those components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems, and components. The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a suitable testing program.

Section 3, "Design Control," of the Rosemount NQM states, in part, that "Changes made to previously verified designs shall be evaluated for... effects of the change on the overall design... "

Contrary to these requirements, as of March 12, 1993, the NRC inspection team identified the following nonconformances:

1. Rosemount did not perform an adequate verification of the design change authorized by Engineering Change Order (ECO) 601919, dated May 23, 1983, and the associated Rosemount Model 1153 Equipment Qualification Report was not reconciled. This design change relaxed the process flange O-ring groove dimension tolerance of the Model 1153 and subsequently the 1154 transmitters.

The engineering justification did not address long-term or other effects on the qualified life that the changed dimensional tolerance and resulting variable force might have had on the sensor cell seal integrity and potential loss of oil.

Similarly, Rosemount did not perform an adequate verification of the design changes authorized by ECO 603675, dated February 1, 1984. This design change relaxed the process flange O-ring groove dimension tolerance of the Model 1152 transmitter. The Rosemount engineering justification used a similarity rationale indicating that the dimensional change on the Model 1152 was acceptable based on the acceptability of the same change on the Model 1153. However, the similarity rationale appeared to be invalid because the Model 1152 used an O-ring different in material from the Model 1153 transmitter O-ring. (93-01-07)

2. Rosemount did not consider by test or evaluation the manufacturer's recommendations regarding application or shelf life, and did not have a documented basis for the operating temperature limits of the fluid used in sensor cells of nuclear-qualified transmitters. (93-01-08)

- C. Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50 requires, in part, that a comprehensive system of planned and periodic audits be carried out to verify compliance with all aspects of the quality assurance program and to determine the effectiveness of the program.

Section 18.3.3, "Internal Audits," of the Rosemount NQM requires that internal audits of selected aspects of activities shall be performed with a frequency commensurate with their safety significance and in such a manner as to assure that an audit of all activities within the scope of the Nuclear Quality Program will be completed annually.

Section 4.21, "Quality Assurance Audit," of the Rosemount QAM-M Quality Assurance Manual No. 1742, Revision M, dated October 28, 1988, required that all quality related functions be audited at some time in each calendar year, and that implementation of the controlling documents be audited to verify compliance with the QA program at least every 14 months.

Section 3.0, "Responsibilities," of NDP N-0730 requires, in part, that the Nuclear Quality Department audit the Chanhassen facility to verify conformance of a quality system and its capability to meet 10 CFR Part 21.

Contrary to these requirements, as of March 12, 1993, the NRC inspection team identified that Rosemount did not schedule or conduct any internal audits in 1989. Additionally, since December 1991, Rosemount has failed to audit quality-related activities at the Chanhassen facility to determine compliance with applicable portions of Appendix B to 10 CFR 50 and 10 CFR Part 21. (93-01-09)

Please provide a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Chief, Vendor Inspection Branch, Division of Reactor Inspection and Licensee Performance, Office of Nuclear Reactor Regulation, within 30 days of the date of the letter transmitting this Notice of Nonconformance. This reply should be clearly marked as a "Reply to a Notice of Nonconformance," and should include for each nonconformance: (1) a description of steps that have been or will be taken to correct these items; (2) a description of steps that have been or will be taken to prevent recurrence; and (3) the dates your corrective actions and preventative measures were or will be completed.

Dated at Rockville, Maryland
this 4th day of March, 1994.

SYNOPSIS

This investigation was initiated on February 9, 1990, at the request of the Nuclear Regulatory Commission (NRC) Executive Director for Operations (EDO) to determine if Rosemount, Inc. (RM) had provided inaccurate and incomplete information to the NRC during a meeting conducted on April 13, 1989, regarding the loss of fill oil failure experienced by the RM 1152 transmitter; determine if RM deliberately delayed notification to the NRC by not reporting the loss of fill oil failures of the RM 1153 and 1154 transmitter by a formal 10 CFR Part 21 notification; determine if RM had discriminated against an employee for raising a safety concern; and determine if Ventech Controls, Inc., was counterfeiting and refurbishing RM transmitters for sale to the nuclear industry.

Based on the testimonial and documentary evidence developed during the investigation, the Office of Investigations concluded that the allegation that RM provided inaccurate and incomplete information to the NRC during an April 13, 1989, public meeting regarding the failure experience of the RM 1152 transmitter was not substantiated. From the evidence developed during the investigation it is concluded that RM acted in careless disregard by failing to adequately identify and report potential defects as required by 10 CFR 21. The evidence did not substantiate the allegation that an RM employee was discriminated against for raising safety concerns. The evidence developed did not substantiate the allegation that Ventech, Inc., was counterfeiting/refurbishing RM transmitters and selling them to the nuclear industry.