

**The Foxboro Company**Foxboro, MA 02035 U.S.A.  
(617) 543-8750

12 March 1981

Subject: Potential Deficiency Affecting Foxboro Transmitters,  
Model Numbers N-E11, N-E13 or E11, E13 with suffix  
Codes /MCA, /MCA/RRW, or /MCA/RR

Gentlemen:

Our records indicate that you have received one or more of the Foxboro model numbered transmitters listed above. This letter is to notify you that two deficiencies have been discovered in some of these transmitters which may exist in the units shipped to you. The transmitters in question operate at a signal level of 10-50mA. Similar model numbered units operating at 4-20mA are not affected.

The first issue involves the possible use of incorrect insulating sleeving on transistor and zener diode lead wires in the amplifier. The second issue involves the use of a specific vendor's capacitor which is not hermetically sealed (although claimed to be so). As a result, the capacitor electrolyte can leak under adverse service conditions, specifically heat and time. The failure mode is a decrease in resistance across the capacitor resulting in electrical leakage. The transmitter operation can be affected by limiting the output to something less than full value which, in time, can degrade to no output at all.

Insulating Sleeving - Radiation resistant sleeving consisting of a silicone coated glass fiber braid has been substituted by a teflon sleeving in some transmitters. Tests have shown that teflon will become brittle and deteriorate with a substantial integrated radiation dose. Foxboro testing has demonstrated that the teflon sleeving used in these devices will withstand an integrated dose of 10 megarads with no noticeable deterioration. Tests to 200 megarads produce the brittle conditions which can result in the teflon flaking from the wires. Based on these tests, operating plants not expected to exceed an integrated dose of 10 megarads have no potential problem and no action is required.

Where the integrated dose rate could exceed 10 megarads, then units in service should be inspected to determine if the proper insulating material has been used. This can be accomplished by opening the transmitter in accordance with Foxboro Master Instruction MI 20-145. The amplifier cover must be removed exposing the amplifier assembly. At one end of the assembly, a transistor and a zener diode are mounted in the base casting which serves as a heat sink. The insulating material in question is a sleeving slipped over the lead wires from these two components. The proper material is white and heavy looking. Positive

*Dupe  
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identification can be made by inspecting one end of the material to establish that the outer material covers an inner braid. Teflon, if used, will be a single layer material and could be either clear or white.

If improper insulation is present, then the corrective action is to replace the amplifier (Foxboro P/N N0148PW). Replacement amplifiers can be purchased from your local Foxboro Sales or Service Representatives. If you prefer to have Foxboro Service Personnel inspect the equipment and, if necessary, replace the amplifier, this can be arranged at standard service rates.

Capacitor - The capacitor degradation problem was discovered over time through tracking failure situations. Internal corrective action has been taken to remove the vendor involved from the qualified vendor list and to purge all stock of capacitors from this vendor. Degradation of this capacitor is a function of time and service conditions with heat being a primary contributor. This phenomenon was observed in recent tests of transmitters using these capacitors. The capacitor in question is manufactured by Cornell-Duebilier and can be specifically identified by a type number in the form TX-65-XXXX as well as a monogram in a box followed by a date code, e.g. CDÉ 0874. It is assigned Foxboro part number N0141MF.


To determine if this capacitor is present requires a visual inspection of the amplifier which can be accomplished as described above for the insulating sleeving inspection. The recommended corrective action should the above described capacitor be present is to replace the amplifier (Foxboro P/N N0148PW) although it is possible to replace the capacitor with a Foxboro provided substitute. Use of Foxboro Service personnel to perform the inspection and replacement, if necessary, can be arranged at standard service rates as described above.

Due to lack of knowledge of specific application, redundancy, and the like, Foxboro cannot determine if the NRC reporting requirements of 10CFR Part 21 are applicable. This determination is the responsibility of the user and any such reporting would be made by them after completing their evaluation of the situation.

If you have any questions regarding the above, please contact the undersigned directly.

Very truly yours,

THE FOXBORO COMPANY

  
William Calder, Manager  
Corporate Quality Assurance

joy  
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Enclosure MI 20-145

**FOXBORO**