

THOMAS A. RORRO, P.E., E.I.

P.E. 24GE02467300; E.I. 9435

24 Belmont Road
Glen Rock, NJ 07452
(201) 445-7860
(201) 970-6839 (cell)
trorro@optonline.net

15 December 2011

Mr. Edward M. Smith
Director of Codes and Standards
Department of Community Affairs
PO Box 802
Trenton, NJ 08625-0802

Reference: *Construction Code Communicator*, Spring 2011, "Electrical Bonding of CSST Gas Piping Systems" by Rob Austin, Suzanne Borek & Tom Pitcherello.

Dear Sir,

I hold licenses as a professional engineer and an electrical subcode official in the State of New Jersey. The above referenced article has recently created controversy in our office and after some consideration; I would like to express serious technical concerns with the solution presented.

The article quotes "Section 309.1 of the (IRC)/G2410 (IFGC) as follows "Gas piping shall not be used as a grounding electrode." Then goes on to parse the word *used* as a legal definition some how implying that intent controls the effect. Unfortunately, it is the laws of physics that describe the movement of electrons that determines the "use" of the gas piping as configured. If the gas pipe is bonded in any of the three ways shown on the diagram in the referenced article it will become a grounding electrode. This will violate Section 309.1 of the IFGC.

There is also an additional danger. In my opinion, it is highly likely that the gas pipe system will also become a current carrying *grounded neutral conductor*. Given inductive loads, such as refrigerators and air conditioning motors that exist in virtually all residential electrical systems, the chance of an electrical arc is high if the gas pipe is broken. This will result in a situation where we have fuel and ignition simultaneously present. This could easily result in a fire accelerated by the continued flow of natural gas.

As an electrical subcode official, I feel that a change to the body of codes of this magnitude would more appropriate be handled by a "Formal Technical Opinion" and not a simple article in the *Communicator*. This would inherently require the additional technical rigor that is warranted in this situation.

I propose that the above referenced article be immediately withdrawn as it creates a continuous unsafe condition to protect from a very low probability lightning strike event.

Finally, there are other solutions to this problem that do not carry the serious consequences of the solution proposed in the *Communicator*. I would be happy to discuss these possible solutions should you wish to pursue this matter further.

Sincerely,



Thomas A. Rorro P.E., E.I.

Signed and Sealed December 15, 2011
NJ License P.E. 24GE02467300

Cf: Rob Austin
Suzanne Borek
Tom Picherello

7003 3110 0002 9174 0640
