



LPI TECH LETTER

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NFPA 54 (National Fuel Gas Code) To Include Bonding Requirements

The purpose of this Tech Letter is to provide updated information to an industry issue that was previously addressed in Tech Letter Number 3, "Bonding of Gas Lines," dated February, 2005. This Tech Letter provides further clarification on the subject matter and updated information with regard to code and safety standard requirements.

Necessity for Coordination of Documents

For many years, the requirements of the National Fire Protection Association Safety Standard, NFPA 780 have called for the interconnection of all metallic piping systems with the lightning protection grounding system to create common potential of systems within a structure. Gas piping systems have required bonding on the customer side of the meter to accomplish this goal (as addressed in above referenced Tech Letter vol. 3, no. 3). It has taken some time to coordinate all NFPA documents on this point, but the newest edition of NFPA 54 (National Fuel Gas Code), which was approved at the General Session at the annual NFPA World Safety Conference and Expo in Las Vegas on June 4, 2008, will include language to provide clarification with regard to the required bonding. Full wording on these changes and the clarifying language as related to bonding and grounding of gas piping systems will appear in the new printing for the 2009 document. LPI

has provided section and text references for this issue, below:

7.13.1 Each aboveground portion of a gas piping system that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping shall be considered to be bonded when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supplying that appliance. CSST gas piping systems shall be bonded to the electrical service grounding electrode system at the point where the gas service enters the building. The bonding jumper shall not be smaller than 6 AWG copper wire.

7.13.2 Gas piping shall not be used as a grounding conductor or electrode.

7.13.3 Gas piping shall not be used as a grounding conductor or electrode. Where a lightning protection system is installed for the structure, metallic gas piping shall be bonded to the

lightning protection grounding system from a point downstream of the customer's meter and bonded in accordance with Section 7.13.1.

Text to be added to Annex Section "A"

A7.13.1 The National Electrical Code (NEC) or NFPA 70 includes requirements for bonding of metallic piping systems in Article 250.104(B) and sized in accordance with Article 250.122 when using the rating of the circuit that may energize the piping system(s) and connected in accordance with Article 250.70.

Where a lightning protection system is installed for a structure, NFPA 780.4.14 requires that all grounding media, including underground metallic piping systems, be interconnected to provide a common ground potential. Underground piping systems are not permitted to be substituted for grounding electrodes, but must be bonded to the lightning protection grounding system. The term "likely to become energized" refers to the possible, but unexpected, flow of electric current through non-current carrying metallic piping (such as gas piping). The piping may become energized by various means such as a ground fault or short-circuit or by stray currents caused by a nearby lightning strike.

Conclusion

These changes and additions to the NFPA 54 document follow updates that have already been implemented to the other NFPA documents (NFPA 13 Standard for the Installation of Sprinkler

Systems and NFPA 24 – Standard for the Installation of Private Fire Service Mains and Their Appurtenances). The current editions of the NFPA 13 and NFPA 24 documents clarify language with regard to bonding and interconnection requirements with regard to lightning protection systems, which has helped to highlight the importance of equipotential bonding and helped to resolve industry issues with "authorities having jurisdiction" forcing removal of bonds or not allowing them in the first place. Now through its inclusion in NFPA 54, the clarified language which addresses the bonding specified in NFPA 780, becomes a requirement for all installations of gas distribution systems on buildings with lightning protection systems.

Clear guidance is provided to lightning protection installers, gas service providers and system installers, professionals, and owners on the issue through unified documentation in the Lightning Protection Standard and the National Fuel Gas Code.



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