Do you feel like a ship lost in the fog when it comes to understanding lightning protection and CSST? You're not alone. The market is filled with conjecture, half-truths, contradictory information, unsubstantiated claims, and even scare tactics. Does CSST have to be bonded? Do the "arc-resistant" CSST products have to be bonded? Is a bonded "arc-resistant" CSST installation safer than a bonded traditional CSST installation? Once the fog is cleared, the answer to these questions becomes evident. If you want clarification, you needn't go any further than the information below:

1. In April of 2012 the NFPA 54 Technical Committee commissioned the Gas Technologies Institute (GTI) to conduct a study to determine the most effective methods to address the dangers of lightning strikes and CSST. In September of 2013 they issued a report entitled "*Validation of Installation Methods for CSST Gas Piping to Mitigate Indirect Lightning Related Damage*". The testing included 4 different brands of CSST and in that report the following conclusion was drawn: "*With a sufficiently short bonding conductor, arcing is suppressed entirely, and the possibility of an arc discharge perforation is eliminated*".

2. Subsequent to that report, the NFGC issued their 2015 code. As it relates to the electrical grounding and bonding code (section 7.13.2 * CSST.) the code states: "*CSST gas piping systems and gas piping systems containing one or more segments of CSST, shall be bonded to the electrical service grounding electrode system or where provided, lightning protection grounding electrode system.*" The bonding requirements stayed the same as the previous code and no provisions or exceptions for CSST with "arc-resistant" jackets were included in the latest version of this code (NFPA 54), even though the authors are fully aware that "arc resistant" CSST products have been on the market for several years. If there was a safer alternative available, wouldn't they have included it in their code?

Conclusion

Although extremely rare, electrical arcing is the single most dangerous threat to safety in a lightning scenario. "Arc-resistant" CSST does not eliminate the chances of an arcing event. In addition, no scientific test results have been put forth that confirms that "arc-resistant" CSST provides more safety than bonded standard CSST. You can be certain that if CSST jacketing was instrumental to safety based on all of the research available to them, NFGC would have addressed it in their code – they did not. The equalization of voltage resistance in the electrical system, which only bonding accomplishes, is what makes the system safe. That is why the gas and electrical industries, code bodies, and even CSST manufacturers are clearly moving toward more strict bonding requirements for all metallic systems including CSST. Lastly, the claims that "arc-resistant" CSST requires the same bonding requirements as steel pipe (bonded to an appliance in lieu of the grounding electrode), are just that – *claims*. The code does not make that distinction! By educating yourself you needn't be lost in the fog of conjecture, half-truths, contradictory information, unsubstantiated claims, or even scare tactics. For more information contact your local Pro-Flex Manufacturers Representative or Pro-Flex directly at (877) 798-6291.