



Amy Beasley Cronin
Secretary, Standards Council

30 August 2012

To: Interested Parties

Subject:

Standards Council Decision (Final):	D#12-15
Standards Council Agenda Item:	SC#12-8-56
Date of Decision*:	9 August 2012
Re: Standards Council Decision #10-2 and NFPA 54, <i>National Fuel Gas Code</i> , scheduled 2015 edition	

Dear Interested Parties:

At its meeting of August 7-9, 2012, the Standards Council considered the above referenced matter.

Attached is the final decision of the Standards Council on this matter.

Sincerely,

A handwritten signature in black ink that reads "Amy Beasley Cronin".

Amy Beasley Cronin
Secretary, NFPA Standards Council

- c: D. Berry, M. Brodoff, L. Fuller, D. Beach, G. Colonna
Members, Technical Committee on National Fuel Gas Code (NFG-AAA)
Members, Technical Committee on Lightning Protection (LIG-AAA)
Members, National Electrical Code Panel 5 (NEC-P05)
Members, National Electrical Code Technical Correlating Committee (NEC-AAC)
NFPA 54 CSST Task Group
Members, NFPA Standards Council (AAD-AAA)
Individuals Providing Appeal Commentary

*NOTE: Participants in NFPA's codes and standards making process should know that limited review of this decision may be sought from the NFPA Board of Directors. For the rules describing the available review and the method for petitioning the Board for review, please consult section 1.7 of the NFPA Regulations Governing Committee Projects and the NFPA Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council. Since this Council decision is not "related to the issuance of a document" as referenced in 1.7.2 of the Regulations Governing Committee Projects, notice of the intent to file such a petition must be submitted to the Clerk of the Board of Directors within a reasonable time period.



Standards Council Decision (Final):	D#12-15
Standards Council Agenda Item:	SC#12-8-56
Date of Decision*:	9 August 2012
Re: Standards Council Decision #10-2 and NFPA 54, <i>National Fuel Gas Code</i> , scheduled 2015 edition	

At its meeting of August 7-9, 2012, the Standards Council considered a letter from Frank Stanonik of the Air-Conditioning, Heating, and Refrigeration Institute, Arlington, VA, dated April 9, 2012. The stated purpose of the letter is to "...inform the Standards Council of the progress being made by the CSST industry in response to Standards Council Decision #10-2, issued on June 23, 2010."

Background. In 2009, the Standards Council became aware of concerns with the adequacy of the bonding provisions contained in NFPA 54, *National Fuel Gas Code*, for corrugated stainless steel tubing (CSST) in gas piping systems. How these concerns arose is described in Standards Council Decision #09-18 (Agenda Item SC#09-8-16[d], August 6, 2009). In that Decision, the Council noted that the record before it revealed both jurisdictional and, more importantly, potential technical issues that called for further attention within the standards development process going forward. The technical issues involved whether the bonding requirements in NFPA 54 for protecting CSST against lightning related damage had been adequately substantiated. A Council Task Group was formed to gather information and make recommendations to the Council on CSST (hereafter, the "Council Task Group").

The Council Task Group reported back to the Council in a report dated February 11, 2010. The Council's consideration of this report is set forth in Standards Council Decision #10-2 (Agenda Item SC #10-3-20, March 3, 2010), (hereafter, Decision #10-2). As more fully described in that Decision #10-2, the task group reported a lack of technical substantiation sufficient to ascertain whether the existing bonding requirements in NFPA 54 provided adequate protection from lightning induced surges. Concerned with the lack of technical substantiation, the Council Task Group concluded that a research program was necessary to "identify safe methods for the installation of CSST to protect against lightning induced failure with consequent gas leakage." Decision #10-2 at p. 3.

After review, the Council agreed with the Council Task Group that CSST would need to receive further attention in the standards development process going forward. To assist the NFPA 54 Technical Committee with input and expertise concerning the lightning-related safety issues related to CSST, the Council also directed that an NFPA 54 CSST Task Group be formed containing expertise from members of the Technical Committees responsible for NFPA 54, NFPA 70[®], *National Electrical Code*[®], NFPA 780, *Standard for the Installation of Lightning Protection Systems*, and from other appropriate organizations such as those that certify or develop product standards related to CSST. More importantly, the Council directed that the CSST industry or others advocating the

continued use of CSST in gas piping systems should validate the safe use of the product through independent third-party validated research and testing that can be reviewed and evaluated by standards developers in a timely way. On this point, Decision #10-2 states, in greater detail, as follows:

Over the next full revision currently scheduled to be in the Annual 2014 revision cycle, the industry or others advocating the continued use of CSST in gas piping systems shall validate the safe use of the product through independent third-party validated research and testing that can be reviewed and evaluated by standards developers in a timely way. Without prescribing who would be most appropriate to organize or conduct this independent research, the Council notes that the NFPA 54 CSST Task Group may be useful in providing input into the scope of research necessary to allow standards developers to establish adequate provisions concerning CSST. In addition, the [Council Task Group] noted that the Fire Protection Research Foundation is discussing the possibility of undertaking a research program related to CSST and lightning protection. The Research Foundation frequently can play a useful role in identifying research needs or in conducting research. The Standards Council, however, wishes to emphasize that it is primarily for the participants in the NFPA standards development process to fund and produce the technical substantiation necessary to support the technical content of codes and standards. See, e.g., Standards Council Decision #00-22 at p. 5 (SC#00-60, July 20, 2000); Standards Council Decision #00-30 (SC#00-60, October 6, 2000). Whether through the auspices of the Research Foundation or through other means, it is incumbent upon the manufacturers or others promoting the use of CSST in gas piping systems to provide independently validated and reliable technical substantiation demonstrating that CSST can be safely used. If such substantiation is not provided, the Technical Committee on the National Fuel Gas Code must consider prohibiting the use of CSST in NFPA 54, *National Fuel Gas Code*. In addition, should the issues not be reasonably addressed by the end of the next full revision cycle, Annual 2014, the Council may take action as it deems appropriate up to and including the prohibition of the use of CSST in NFPA 54.

As the above quotation indicates, Standards Council Decision #10-2 directs that manufacturers and others promoting the use of CSST in gas piping systems (hereafter, the “CSST proponents”) should proceed with efforts to validate the safe use of the product through “independent third-party validated research and testing.” Although the Council stressed that the CSST proponents were under no obligation to use the Fire Protection Research Foundation (hereafter Research Foundation) as the independent third-party, the CSST proponents nevertheless chose to do so. As a consequence, the Research Foundation initiated activities, sponsored by the CSST proponents and others, that resulted in a proposed test plan aimed at fulfilling the directive of Decision #10-2. See the Research Foundation proposal entitled *Validation of Installation Methods for CSST Gas Piping to Mitigate Lightning Related Damage, Phase 1* (April 2011) (a review and gap analysis to inform a future research project designed to validate installation methods for CSST gas piping to mitigate damage due to lightning events) (hereafter, the “Phase I

Report”); and *Validation of Installation Methods for CSST Gas Piping to Mitigate Lightning Related Damage, Phase II, Proposal V2* (November 2011) (proposing a test plan to implement the testing recommendations from the Phase 1 Report) (hereafter, the “Phase II Test Plan”). In order to ensure that the test plan would meet the needs of the standards developers, the Research Foundation solicited and incorporated input from the NFPA 54 CSST Task Group and the NFPA 54 Technical Committee, which reviewed, suggested modifications to and indicated their general agreement with the final test plan.

Thereafter, in the Fall of 2011, the Research Foundation proceeded to solicit funding from the CSST industry to carry out the proposed test plan. There followed a period of waiting for the industry's response along with periodic dialogue with industry representatives regarding the scope of the test plan. At some point, the industry began to express objections to one element of the program; namely, a test to evaluate response to a simulated arc from the home electrical system. The Research Foundation declined to revise the test plan to eliminate this test and sometime in early April of 2012, CSST industry representatives notified the Research Foundation that it had been decided not to proceed with the project at the Research Foundation.

Discussion of the CSST Proponents’ Letter. As indicated at the beginning of this decision, the Standards Council has received a letter from a representative of CSST proponents reporting on the CSST industry activities in response to Standards Council Decision #10-2. The letter asserted, without support, that the Phase 1 Reports "results" validated the appropriateness of using bonding to protect CSST against lightning induced arcing damage. The letter made no mention of the CSST proponents’ disagreement with the Phase 2 Test Plan or of their resulting decision to part ways with the Research Foundation. Instead, the letter indicates that the CSST manufacturers have agreed to fund additional research in an unspecified “Phase II project,” and it names those who have been selected to manage and conduct this project.

The Council, in its Decision #10-2, neither requested nor anticipated any interim report from the CSST proponents, and the CSST proponents do not, by submitting its letter, demonstrate compliance with or satisfy any element of the Council’s decision. Moreover, the Council’s review of this letter should carry no implication that the Council has approved the approach it outlines. The letter, however, does raise concerns that the Council wishes to address.

It appears from the letter and the reported activities relating to the Research Foundation, that the CSST proponents no longer wish to engage the Research Foundation to conduct the testing that the Research Foundation has determined to be appropriate in its Phase 2 Test Plan. The CSST proponents, while not required to do so, chose the Research Foundation to develop a test plan to provide substantiation for the safe use of CSST. For the CSST proponents to now unilaterally reject any element of that test plan is inconsistent with the requirement in Decision #10-2 that the necessary research and testing be independent and third-party validated. The CSST proponents chose the Research Foundation as that independent third-party to develop a valid test plan, and the Council believes that this test plan must be carried out in order to meet the intent of Decision #10-2.

The Phase 2 Test Plan need not be conducted by the Research Foundation. It should however, be conducted or managed by a reputable independent, third party testing laboratory or similar entity which undertakes to conduct the testing as set forth in the Phase 2 Test Plan. In implementing the Phase 2 Test Plan, there will undoubtedly be a need to work out certain details of how the tests are to be conducted, and judgments about those details will invariably be called for by the independent entity that is chosen to implement the testing. This is to be expected and is acceptable so long as the independent entity makes those judgments and undertakes to do so in a manner that is consistent with the intent and purpose of the Phase 2 Test Plan.

Finally, the April 9, 2012 letter may be suggesting that the industry will be seeking to have the NFPA 54 CSST Task Group serve in some fashion as the independent third-party called for by the previous Decision #10-2. Neither the task group nor the NFPA 54 Technical Committee is an appropriate entity to serve in this role. Eventually, however, it will be the NFPA 54 Technical Committee, with the assistance of the NFPA 54 CSST Task Group, that will be receiving and evaluating the results of the Phase 2 testing for use in the developing any appropriate revisions to NFPA 54. As did the Research Foundation, it is appropriate for the CSST proponents and the third party entity conducting the testing to consult with these standards bodies, to seek their input, and to keep them informed. The Council urges the CSST proponents and the testing entity to do so and to act promptly and in keeping with the directions laid out by the Standards Council here and in its previous Decision #10-2.