

Endress+Hauser Flowtec Division USA Greenwood, Indiana USA

October 14, 2021

Charles Stutesman, Committee Chair
Southernern Weights and Measures Association
Specifications & Tolerances Committee

Specifications & Tolerances Agenda Item – OTH-22.1

Dear Mr. Stutesman,

Regarding the 2021 CWMA Specifications and Tolerances Agenda items please revise item OTH-22.1 as noted below:

- 1) Section 3.1.1. in the first sentence, strike “likely through NIST,”
- 2) Section 3.1.2. in the first sentence, strike “the National Institute of Standards and Technology Handbook 105-Series standards or other“.
- 3) Section 3.1.3. in the last sentence strike “NIST” and insert “International System of Units (SI)”.

I recommend that this agenda item be revised as recommended and moved forward as a Developing item.

Background

In September 2014, I submitted a Form 15 proposing the revision of the Liquid Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices (LPG) Code and the Mass Flow Meters (MFM) Code sections N.3 Test Drafts that would edit the content and add N.3.2 to describe the test using a reference meter. These items, LPG-15.1 and MFM-15.1 have moved through the Weights and Measures Associations.

It is my understanding that, because of comments during open hearings on the topic of field standards, the National Institute of Standards and Technology (NIST), Office of Weights and Measures (OWM) has submitted a Form 15 proposal to amend NIST Handbook 44 Appendix A, Fundamental Considerations, Section 3, Testing Apparatus, adding section 3.1.1 Essential Elements of Traceability, 3.1.2. Specifications for Standards and 3.1.3. Authority for Approving Field Test Standards and/or Equipment.

I would like to ask that the Central Weights and Measures Association, Specifications and Tolerances Committee consider my comments and recommendations for revision.

- 1) In 3.1.1. in the first sentence, I believe that the statement in the sentence that the field test standards and test methods should be traceable to the International System of Units (SI) is a complete statement of traceability. The statement “likely through NIST,” is self-serving to NIST and unnecessary. Please strike the statement “likely through NIST,”.

- 2) In section 3.1.2, in the first sentence, the statement Standards will meet the specifications of the National Institute of Standards and Technology Handbook 105-Series standards or other appropriate designated documentary standards (e.g., ASTM, ASME, etc.) is inappropriate. The National Institute of Standards and Technology Handbook 105-Series is a series of NIST publications and not consensus standards. Please strike “the National Institute of Standards and Technology Handbook 105-Series or other”.
- 3) Lastly, the statement in section 3.1.3 in the last sentence the traceability should be through the International System of Units (SI) and not necessarily through NIST. Traceability of equipment can be achieved through other national agencies other than NIST such as Measurement Canada, NMI in The Netherlands, PTB in Germany, Metas in Switzerland or others. Traceability of a standard through another nation is just as valid as a standard traceable through NIST. Requiring a device calibration or standard to be traceable through NIST could actually add undue cost to a user of the standard. Please strike the abbreviation “NIST” and insert “the International System of Units (SI)”.

The recommended changes are edited in the text of the item below. Please consider my request for changes to the NIST proposal OTH-22.1, accept my recommendations and move the item forward as a Developing item.

Thank you for your consideration.

Sincerely,

Michael Keilty
Standards and Metrology Manager
Endress+Hauser Flowtec AG, Division USA

Below is revised from what is shown in S&T agenda

OTH-22.1 Appendix A: Fundamental Considerations, 3. Testing Apparatus

3.1.1. Essential Elements of Traceability. To ensure that field test standards and test methods provide for measurements that are traceable to the International System of Units (SI), likely through NIST, they must satisfy the “Essential Elements of Traceability.” As explained in NIST IR6969 GMP-13 Good Measurement Practice for Ensuring Metrological Traceability, these elements include the following.

- Realization of SI Units
- Unbroken Chain of Comparisons
- Documented Calibration Program
- Documented Measurement Uncertainty
- Documented Measurement Procedure
- Accredited Technical Competence
- Measurement Assurance

3.1.2. Specifications for Standards. Standards will meet the specifications of the National Institute of Standards and Technology Handbook 105-Series standards or other appropriate designated documentary standards (e.g., ASTM, ASME, etc.). Recommendations regarding the specifications and tolerances for suitable field standards may be obtained from the Office of Weights and Measures of the National Institute of Standards and Technology.

3.1.3. Authority for Approving Field Test Standards and/or Equipment. This section shall not preclude the use of additional field standards and/or equipment, as approved by the Director, for uniform evaluation of device performance. Specific types of field test standards are not required to be identified in a NIST Handbook 44 code in order to be considered suitable. Provided the standards meet the “Essential Elements of Traceability” (described in Section 3.1.1. above) that help ensure the standards are suitable and capable of supporting measurements traceable to the International System of Units (SI) NIST, they need only be approved by the Director.