

Specifications and Tolerances (S&T) Committee 2020 Annual Meeting Report Addendum Sheet

Mr. Loren Minnich, Committee Chair
Kansas

INTRODUCTION

The S&T Committee submits its Committee Interim Report for consideration by National Conference on Weights and Measures (NCWM). This addendum sheet contains the report items published in *NCWM Publication 16: Committee Reports for the 105th Annual Meeting*. The addendum sheet will address the following items during the Annual Meeting.

Items are grouped according to item status:

(VC) Voting Consent Calendar: the committee has grouped these items for a single vote.

(V) Voting Item: the committee is making recommendations requiring a vote by the active members of NCWM.

(I) Informational Item: the item is under consideration by the committee but, not proposed for Voting.

(A) Assigned Item: the committee has assigned development of the item to a recognized subcommittee or task group.

(D) Developing Item: the committee determined the item has merit; however, the item was returned to the submitter or other designated party for further development before any action can be taken at the national level.

(W) Withdrawn Item: the item has been removed from consideration by the committee.

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Details of All Items
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SCL – SCALES

SCL-17.1 V S.1.8.5. Recorded Representations, Point of Sale Systems

SCL-17.1
<p>Comments: The committee agreed to keep this as a Voting item with the below amendments based on comments received during open hearings.</p>
<p>S.1.8.5. Recorded Representations, Point-of-Sale Systems. – The sales information recorded by cash registers when interfaced with a weighing element shall contain the following information for items weighed at the checkout stand¹:</p> <ul style="list-style-type: none"> (a) the net weight;¹ (b) the unit price;^{1,2} (c) the total price; and (d) the product class or, in a system equipped with price look-up capability, the product name or code number; and <u>(e) the tare weight.</u> <p><u>[Non-retroactive as of January 1, 2024]</u> <u>(Amended 2021)</u></p> <p>¹Weight values shall be identified as tare and net, or gross if applicable. <u>The unit of weight shall be identified by as kilograms, kg, grams, g, ounces, oz, pounds, or lb. The “#” symbol is not acceptable.</u> <u>[Nonretroactive as of January 1, 2006]</u></p> <p>²For devices interfaced with scales indicating in metric units, the unit price may be expressed in price per 100 grams. <u>(Amended 1995, and 2005, and 2021)</u></p>

SCL-19.2 V UR.5. Coupled-in-Motion Railroad Weighing Systems.

SCL-19.2
<p>Comments:</p>
<p>The Committee agreed to keep this as a Voting item.</p>

SCL-20.10 V S.1.2.2.2. Class I and II Scales Used in Direct Sale and S.1.2.2.3. Deviation of a “d” Resolution.

SCL-20.10
Comments:
The Committee agreed to keep this as a Voting item.

SCL-20.13 VC N.1.5. Discrimination Test.

SCL-20.13
Comments:
The Committee agreed to include this on the Consent Calendar.

LMD – LIQUID MEASURING DEVICES

LMD-19.1 V UR.4.2. Security for Retail Motor-Fuel Devices.

LMD-19.1
Comments:
The Committee agreed to keep this as a Voting item.

LMD-20.2 VC S.1.6.10. Automatic Timeout – Pay-at-pump Retail Motor-Fuel Devices.

LMD-20.2
Comments:
The Committee agreed to include this on the Consent Calendar. The Committee will work with NIST OWM to make the necessary changes to other sections of Handbook 44 to make similar automatic timeout requirements consistent.

LPG – LPG AND ANHYDROUS AMMONIA LIQUID-MEASURING DEVICES

LPG-20.1 VC S.2.5. Zero-Set-Back Interlock and S.2.6. Automatic Timeout.

LPG-20.1
Comments:
The Committee agreed to include this on the Consent Calendar as amended below. The Committee will work with NIST OWM to make the necessary changes to other sections of Handbook 44 to make similar automatic timeout requirements consistent.
<i>S.2.5. Zero-Set-Back Interlock Interlock, Stationary and Vehicle Mounted Meters, Electronic.</i>
<i>S.2.5.1. Zero-Set-Back Interlock, Electronic Stationary Meters (Other than Stationary Retail Motor-Fuel Dispensers) and Electronic Vehicle-Mounted Meters, Electronic. - A device shall be so constructed <u>so</u> that after an individual delivery or multiple deliveries at one location have been completed, an automatic interlock system shall engage to prevent a subsequent delivery until the indicating element and, if equipped, recording element have been returned to their zero position. For individual deliveries, if there is no product</i>

~~*flow for two minutes the transaction must be completed before additional product flow is allowed. The 2-minute timeout shall be a sealable feature on an indicator.*~~

[Nonretroactive as January 1, 2021]

(Added 2019)(Renumbered and Amended 2021)

S.2.65.2. Zero-Set-Back Interlock for Stationary Retail Motor-Fuel Devices. – A device shall be constructed so that:

(a) after a delivery cycle has been completed by moving the starting lever to any position that shuts off the device, an automatic interlock prevents a subsequent delivery until the indicating elements and recording elements, if the device is equipped and activated to record, have been returned to their zero positions;

(b) the discharge nozzle cannot be returned to its designed hanging position (that is, any position where the tip of the nozzle is placed in its designed receptacle and the lock can be inserted) until the starting lever is in its designed shut-off position and the zero-set-back interlock has been engaged; and

(c) in a system with more than one dispenser supplied by a single pump, an effective automatic control valve in each dispenser prevents product from being delivered until the indicating elements on that dispenser are in a correct zero position.

[Nonretroactive as of January 1, 2017]

(Added 2016) (Renumbered 2021)

S.2.6. Automatic Timeout.

S.2.6.1. Electronic Stationary Meters (Other than Stationary Retail Motor-Fuel Dispensers) and Electronic Vehicle-Mounted Meters. For individual deliveries, if there is no product flow for three minutes the transaction must be completed before additional product flow is allowed. The 3-minute timeout shall be a sealable feature on an indicator.

[Nonretroactive as of 2021]

S.2.6.2. Automatic Timeout Pay-at-Pump Retail Motor-Fuel Devices. – Once a device has been authorized, it must de-authorize within three minutes if not activated. Re-authorization of the device must be performed before any product can be dispensed. If the time limit to de-authorize the device is programmable, it shall not accept an entry greater than three minutes.

[Nonretroactive as of 2022]

(Added 2021)

WTR – WATER METERS

WTR-20.1 V S.3.2. Meter size and Directional Flow Marking Information.

WTR-20.1
Comments:
The Committee agreed to keep this as a Voting item.
<u>S.3.2. Meter Size and Directional Flow Marking Information.</u> A water meter shall be clearly and indelibly marked with the following information:
<u>(a) meter size on the indicator face plate; and</u>
<u>(b) water flow direction.</u>

[Nonretroactive as of January 1, 2022]
(Added 2021)

WTR-20.2 VC S.1.1.4. Advancement of Indicating and Recording Elements.

WTR-20.2

Comments:

The Committee agreed to include on the Consent Calendar.

MFM – MASS FLOW METERS

MFM-20.1 V S.1.3.3. Maximum Value of Quantity Divisions.

MFM-20.1
Comments:
The Committee agreed to keep this as a Voting item with the below amendments based on comments received during open hearings.
S.1.3.3. Maximum Value of Quantity-Value Divisions.
The maximum value of the quantity-value division shall not exceed the following.
<ul style="list-style-type: none"> (a) For compressed natural gas dispensed as an engine fuel: <ul style="list-style-type: none"> (1) 0.001 for gasoline gallon equivalent (GGE) units; or (2) 0.001 diesel gallon equivalent (DGE) units; or (3) 0.001 kg or 0.001 lb for mass units. (b) For liquefied natural gas dispensed as an engine fuel: <ul style="list-style-type: none"> (1) 0.001 for diesel gallon equivalent (DGE) units; or (2) 0.001 kg or 0.001 lb for mass units. (Added 2019) (c) For all other gases or liquids other than liquefied natural gas dispensed as an engine fuel a maximum value not greater than 0.2 % of the minimum measured quantity. (Amended 1994 and 2019) (Amended 1994, and 2019, and 2021)

EVF – ELECTRIC VEHICLE FUELING SYSTEMS

EVF-19.1 VC S.3.5. Temperature Range for System Components. and S.5.2. EVSE Identification and Marking Requirements.

EVF-19.1
Comments:
The Committee agreed to include this on the Consent Calendar.

EVF-20.2 I Definitions: submeter

EVF-20.2
Comments:
The following portion of Publication 16 is inaccurate:
Item Under Consideration:

Amend NIST Handbook 44, Appendix D. Definitions as follows:

This item will update Section 3.40 Electric Vehicle Fueling Systems Tentative Code

The committee agreed to change the status of this item to Informational to address the concerns with the term “master meter”

The item should appear as follows in future publications:

submeter. – A meter or meter system downstream of the ~~furnished, owned, installed, and maintained by the customer who is served through a utility-owned~~ master meter. [3.40]

TIM – TIMING DEVICES CODE

TIM-20.1 VC S.1.1.3. Value of Smallest Unit.

TIM-20.1
<p>Comments: The committee agreed to include this on the Consent Calendar, please note the following portion of Publication 16 is inaccurate:</p> <p>Item Under Consideration:</p> <p>Amend NIST Handbook 44, Electric Vehicle Fueling Systems follows: This item will update Section 5.55 Timing Devices</p> <p>There is also an editorial change that is needed in Pub 16 to the following:</p> <p>S.1.1.3. Value of Smallest Unit. – The value of the smallest unit of indicated time and recorded time, if the device is equipped to record, shall not exceed the equivalent of following:</p>
<p>No changes.</p>

GMA – GRAIN MOISTURE METERS 5.56 (A)

GMA-20.1 VC S.2.5. Provisions for Sealing.

GMA-20.1
<p>Comments: The committee agreed to include this on the Consent Calendar with the below amendments based on comments received during open hearings.</p> <p>S.2.5. Provision for Sealing. – For devices and systems in which the configuration or calibration parameters can be changed by use of a removable digital storage device, security shall be provided for those parameters as specified in G-S.8.2. For parameters adjusted using other means, the following applies:</p> <p>Provision shall be made for applying a An approved means of security shall be provided seal in a manner that requires the security seal to be broken, or for using other approved means of providing security (e.g., audit trail available at the time of inspection as defined in paragraphs Table S.2.5.1 S.2.5. Categories of Device and Methods of Sealing Requirements for Devices Manufactured Between January 1, 1999 and January 1, 2020 Categories of Device and Methods of and paragraph S.2.5.2 S.2.5.1. Sealing</p>

Requirements for Devices Manufactured on or after January 1, 2020) before any change that affects the metrological integrity of the device can be made to any mechanism.

(Amended 2019, ~~2020~~21)

~~S.2.5.1. Sealing Requirements for Devices Manufactured Between January 1, 1999 and January 1, 2020. The appropriate sealing requirements in Table S.2.5.1. shall apply.~~

~~Table S.2.5.1~~ **Table S.2.5**

Categories of Device and Methods of Sealing

For Devices Manufactured Between January 1, 1999 and January 1, 2020

<i>Categories of Device</i>	<i>Methods of Sealing</i>
Category 1⁺: <i>No remote configuration capability.</i>	<i>Seal by physical seal or two event counters: one for calibration parameters (000 to 999) and one for configuration parameters (000 to 999). If equipped with event counters, the device must be capable of displaying, or printing through the device or through another on-site device, the contents of the counters.</i>
Category 2⁺: <i>Remote configuration capability, but access is controlled by physical hardware.</i> <i>A device shall clearly indicate that it is in the remote configuration mode and shall not be capable of operating in the measure mode while enabled for remote configuration.</i>	<i>The hardware enabling access for remote communication must be at the device and sealed using a physical seal or two event counters: one for calibration parameters (000 to 999) and one for configuration parameters (000 to 999). If equipped with event counters, the device must be capable of displaying, or printing through the device or through another on-site device, the contents of the counters.</i>
Category 3²: Remote <i>Configuration capability access may be unlimited or controlled through a software switch (e.g., password).</i> <i>When accessed for the purpose of modifying sealable parameters, the device shall clearly indicate that it is in the configuration mode and shall not be capable of operating in the measuring mode.</i>	<i>An event logger is required in the device; it must include an event counter (000 to 999), the parameter ID, the date and time of the change, and the new value of the parameter (for calibration changes consisting of multiple constants, the calibration version number may be used rather than the calibration constants). A printed copy of the information must be available through the device or through another on-site device. The event logger shall have a capacity to retain records equal to 25 times the number of sealable parameters in the device, but not more than 1000 records are required. (Note: Does not require 1000 changes to be stored for each parameter.)</i>

<p><u>Category 3a: No remote capability, but operator is able to make changes that affect the metrological integrity of the device (e.g., slope, bias, etc.) in normal operation.</u></p> <p><u>*When accessed for the purpose of modifying sealable parameters, the device shall clearly indicate that it is in the configuration mode and shall not be capable of operating in the measuring mode.</u></p>	<p><u>Same as Category 3</u></p>
<p><u>Category 3b: No remote capability, but access to metrological parameters is controlled through a software switch (e.g., password).</u></p> <p><u>*When accessed for the purpose of modifying sealable parameters, the device shall clearly indicate that it is in the configuration mode and shall not be capable of operating in the measuring mode.</u></p>	<p><u>Same as Category 3</u></p>
<p>¹ Not allowed for devices manufactured on or after January 1, 2020</p> <p>² Required for all devices manufactured on or after January 1, 2020</p>	

[Nonretroactive as of January 1, 2020 ~~1999~~]
 [*Nonretroactive as of January 1, 2014]
 (Amended 1998, 2013, and 2019, ~~2020~~2021)

Note: Zero-setting and test point adjustments are considered to affect metrological characteristics and must be sealed.

(Added 1993) (Amended 1995 and 1997)


~~S.2.5.2.~~ S.2.5.1. Sealing Requirements for Devices Manufactured on or after January 1, 2020. - An event logger is required in the device; it must include an event counter (000 to 999), the parameter ID, the date and time of the change, and the new value of the parameter (for calibration changes consisting of multiple constants, the calibration version number may be used rather than the calibration constants.)

A printed copy of the information must be available through the device or through another on-site device. The event logger shall have a capacity to retain records equal to 25 times the number of sealable parameters in the device, but not more than 1000 records are required. (Note: Does not require 1000 changes to be stored for each parameter.)

MDM – MULTIPLE DIMENSION MEASURING DEVICES

MDM-20.1 VC S.1.3. Negative Values, S.1.6. Customer Indications and Recorded Representations, S.1.7. Minimum Measurement, S.1.8. Indications Below Minimum and Above Maximum, S.2. Design of Zero Fare ~~Tare~~ Dimensional Offset and Appendix D – Definitions: dimensional offset

MDM-20.1
Comments:
The Committee agreed to include this on the Consent Calendar.



- Mr. Loren Minnich, Kansas | Committee Chair
- Mr. Jason Flint, New Jersey | Member
- Mr. Josh Nelson, Oregon | Member
- Mr. Brad Bachelder, Maine | Member
- Mr. Jason Glass, Kentucky | Member
- Mr. Luciano Burtini, Measurement Canada | Canadian Technical Advisor
- Mr. John Barton, NIST, OWM | NIST Technical Advisor
- Ms. G. Diane Lee, NIST, OWM | NIST Technical Advisor
- Mr. Mike Manheim, NCWM | NTEP Technical Advisor

Specifications and Tolerances Committee