

NEWMA Specifications and Tolerances (S&T) Committee 2019 Interim Meeting Report

Mr. Brad Bachelder, Committee Chair
Maine

INTRODUCTION

- 1 The Specifications and Tolerances (S&T) Committee (hereinafter referred to as “Committee”) submits its Report to
- 2 the Northeastern Weights and Measures Association (NEWMA). The Report consists of the NEWMA Agenda
- 3 (NCWM Carryover and NEW items) and this Addendum. Page numbers in the tables below refer to pages in this
- 4 Addendum. Suggested revisions to the handbook are shown in bold face print by striking out information to be deleted
- 5 and underlining information to be added. Requirements that are proposed to be nonretroactive are printed in bold-
- 6 faced italics.

- 7 Presented below is a list of agenda items considered by the NEWMA and its recommendations to the NCWM
- 8 Specifications and Tolerances Committee.

Subject Series List

NIST Handbook 44 – General Code	GEN Series
Scales	SCL Series
Belt-Conveyor Scale Systems	BCS Series
Automatic Bulk Weighing Systems	ABW Series
Weights	WTS Series
Automatic Weighing Systems	AWS Series
Weigh-In-Motion Systems used for Vehicle Enforcement Screening	WIM Series
Liquid-Measuring Devices	LMD Series
Vehicle-Tank Meters	VTM Series
Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices	LPG Series
Hydrocarbon Gas Vapor-Measuring Devices	HGV Series
Cryogenic Liquid-Measuring Devices	CLM Series
Milk Meters	MLK Series
Water Meters	WTR Series
Mass Flow Meters	MFM Series
Carbon Dioxide Liquid-Measuring Devices	CDL Series
Hydrogen Gas-Metering Devices	HGM Series
Electric Vehicle Refueling Systems	EVF Series
Vehicle Tanks Used as Measures	VTU Series
Liquid Measures	LQM Series
Farm Milk Tanks	FMT Series
Measure-Containers	MRC Series
Graduates	GDT Series
Dry Measures	DRY Series
Berry Baskets and Boxes	BBB Series
Fabric-Measuring Devices	FAB Series
Wire-and Cordage-Measuring Devices	WAC Series
Linear Measures	LIN Series
Odometers	ODO Series
Taximeters	TXI Series
Timing Devices	TIM Series
Grain Moisture Meters (a)	GMA Series
Grain Moisture Meters (b)	GMB Series
Near-Infrared Grain Analyzers	NIR Series
Multiple Dimension Measuring Devices	MDM Series
Electronic Livestock, Meat, and Poultry Evaluation Systems and/or Devices	LVS Series
Transportation Network Measuring Systems	TNS Series
Other Items	OTH Series

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Table B
Glossary of Acronyms and Terms

Acronym	Term	Acronym	Term
ABWS	Automatic Bulk Weighing System	NEWMA	Northeastern Weights and Measures Association
AAR	Association of American Railroads	NIST	National Institute of Standards and Technology
API	American Petroleum Institute	NTEP	National Type Evaluation Program
CNG	Compressed Natural Gas	OIML	International Organization of Legal Metrology
CWMA	Central Weights and Measures Association	OWM	Office of Weights and Measures
EPO	Examination Procedure Outline	RMFD	Retail Motor Fuel Dispenser
FHWA	Federal Highway Administration	S&T	Specifications and Tolerances
GMM	Grain Moisture Meter	SD	Secure Digital
GPS	Global Positioning System	SI	International System of Units
HB	Handbook	SMA	Scale Manufactures Association
LMD	Liquid Measuring Devices	SWMA	Southern Weights and Measures Association
LNG	Liquefied Natural Gas	TC	Technical Committee
LPG	Liquefied Petroleum Gas	USNWG	U.S. National Work Group
MMA	Meter Manufacturers Association	VTM	Vehicle Tank Meter
MDMD	Multiple Dimension Measuring Device	WIM	Weigh-in-Motion
NCWM	National Conference on Weights and Measures	WWMA	Western Weights and Measures Association

Details of All Items
(In order by Reference Key)

1 **GEN – GENERAL CODE**

2 **GEN-20.2 G-T.1. Acceptance Tolerances**

3 **Source:**

4 Arizona Department of Agriculture, Weights and Measures Services Division

5
6 **Purpose:**

7 Clarify whether acceptance tolerance should be applied following calibration of equipment.

8 **Item Under Consideration:**

9 Amend NIST Handbook 44 General Code by adding the following new paragraph:

10 **G-T.1. Acceptance Tolerances.** – Acceptance tolerances shall apply to equipment:

- 11 (a) to be put into commercial use for the first time;
- 12 (b) that has been placed in commercial service within the preceding 30 days and is being officially tested
- 13 for the first time;
- 14 (c) that has been returned to commercial service following official rejection for failure to conform to
- 15 performance requirements and is being officially tested for the first time within 30 days after corrective
- 16 service;
- 17 **(d) where evidence exists that calibration has been performed within the past 30 days;**
- 18 **(~~d~~) (e)** that is being officially tested for the first time within 30 days after major reconditioning or
- 19 **overhaul; and**
- 20 **(~~e~~) (f)** undergoing type evaluation.
- 21 (Amended ~~1989~~ XXXX)

22
23 **Background/Discussion:** See Appendix A, Page S&T-A79.

24

NEWMA Report
Regional recommendation to NCWM on item status: <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i> The Committee agrees with the body that the changes proposed are unnecessary and that the item should be withdrawn. During open hearings, the Committee heard from Mr. Jim Willis (NY) and Mr. John McGuire (NJ) who believes the proposal has no merit and is redundant.

25

1
2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **BLOCK 2 ITEMS (B2) DEFINE TRUE VALUE FOR USE IN ERROR**
5 **CALCULATIONS**

6 **Source:**
7 Ross Andersen (Retired)

8 **Purpose:**
9 This proposal has four parts:
10 1. Clarify the concepts in determining error in verification
11 2. Correct Code references to ensure correct reference to either e or d, as appropriate
12 3. Correct Code references regarding issues of scale suitability Table 8
13 4. Explain why e and d are not connected

14 **B2: GEN-20.1 G-T.3. Application and Appendix D – Definitions: true value**

15 **Item Under Consideration:**
16 Amend NIST Handbook 44 General Code as follows:

17 **G-T.3. Application. ~~Tolerances “in excess” and tolerances “in deficiency” shall apply to errors in~~**
18 **~~excess and to errors in deficiency, respectively. Tolerances “on overregistration” and tolerances “on~~**
19 **~~underregistration” shall apply to errors in the direction of overregistration and of underregistration,~~**
20 **~~respectively. Measurement errors shall be in reference to the “true value,” which shall be the legal basis~~**
21 **~~of all tolerance compliance. The calculation of measurement error in testing shall follow these principles:~~**

22
23 **(a) When tolerances in a code are expressed as tolerances “in excess” and tolerances “in deficiency,”**
24 **error shall be calculated as: Error = True Value – Device Indication. Plus (+) errors are “in**
25 **excess” and minus (-) errors are “in deficiency”. These errors may also be known as “errors of**
26 **delivery.”**

27
28 **(b) When tolerances in a code are expressed as tolerances “on overregistration” and tolerances “on**
29 **underregistration,” error shall be calculated as: Error = Device Indication – True Value.” Plus**
30 **(+) errors are “on overregistration” and minus (-) errors are “on underregistration.” These**
31 **errors may also be known as “errors of indication.”**

32
33 **(c) The percent error in all cases shall be calculated as: Error% = Error / True Value * 100**
34 **Example: if the error is +1 g and the true value is 100 g, the error% is +1 %**

35 (Also see Appendix D, Definitions.)
36 (Amended 20XX)

37 And amend Appendix D – Definitions as follows:

38 True Value. – A value representing the quantity of a reference used in evaluating tolerance compliance, which is
39 obtained using prescribed, traceable standards and a prescribed test procedure performed by an authorized person.
40 The true value is expressed without uncertainty and is considered to have no error. The true value may be assigned
41 prior to conducting the test or during the conduct of the test. Examples: When testing a scale using a test weight, the
42 true value of the test weight is typically assigned by an authorized laboratory prior to conducting the test. When
43 testing a liquid measuring device, the true value of the test draft is assigned by the authorized inspector during the
44 conduct of the test.

45 (Added 20XX)

1 **B2: SCL-20.1 N.1.12. Reducing Rounding Error, T.1. General, T.N.2.1. General.**

2 **Item Under Consideration:**

3 Amend NIST Handbook 44 Scales Code as follows:

4 N.1.12. Reducing Digital Rounding Error. – When verifying devices with digital indication, the rounding error
5 resulting from rounding the indication to the nearest digital division shall be reduced whenever the scale division
6 d is greater than 0.2 e. Reduction shall be made using error weights or other means. This shall not apply to field
7 verifications when environmental conditions make the error determination to at least 0.2 e unreliable.

8
9 **T.1. General.** – The tolerances applicable to devices not marked with an accuracy class shall have the tolerances
10 applied as specified in Table T.1.1. Tolerances for Unmarked Scales. **The tolerances hereinafter prescribed**
11 **shall be applied equally to errors of overregistration and errors of underregistration with the weighing**
12 **device adjusted to zero at no load. When tare is used, the tolerance values are applied from the tare zero**
13 **reference (zero net weight indication); the tolerance values apply to the net weight indication for any**
14 **possible tare load using certified test loads.**

15 (Amended 1990 **and 20XX**)

16 **T.N.2.1. General.** – The tolerance values ~~are positive (+) and negative (–)~~ **hereinafter prescribed shall be**
17 **applied equally to errors of overregistration and errors of underregistration** with the weighing device
18 adjusted to zero at no load. When tare is used, the tolerance values are applied from the tare zero reference (zero
19 net weight indication); the tolerance values apply to the net weight indication for any possible tare load using
20 certified test loads.

21 (Amended 2008 **and 20XX**)

22 **B2: SCL-20.2 Verification Scale Division**

23 **Item Under Consideration:**

24 Amend NIST Handbook 44 Scales Code as follows:

25 **~~S.1.2.2. Verification Scale Interval. Scales with e Not Equal to d.~~**

26
27 Move S.1.2.2.2. to Section 3 of the user requirements (or delete it) and renumber subsequent paragraphs.

28
29 Option 1. Move S.1.2.2.2. to User Requirements Section 3.

30
31 ~~***S.1.2.2.2. UR.3.X. Class I and II Scales Used in Direct Sales. – When accuracy Class I and II scales are used***~~
32 ~~***in direct sale applications the value of the displayed division “d” shall be equal to the value of the verification***~~
33 ~~***scale interval “e.”***~~

34 ~~***[Nonretroactive as of January 1, 2020; to become retroactive as of January 1, 2023]***~~

35 ~~***(Added 2017) (Amended 20XX)***~~

36
37 Option 2. Delete S.1.2.2.2. and renumber

38
39 ~~***S.1.2.2.2. — Class I and II Scales Used in Direct Sales. — When accuracy Class I and II scales are used in***~~
40 ~~***direct sale applications the value of the displayed division “d” shall be equal to the value of the verification***~~
41 ~~***scale interval “e.”***~~

42 ~~***[Nonretroactive as of January 1, 2020; to become retroactive as of January 1, 2023]***~~

43 ~~***(Added 2017)***~~

44 **B2: SCL-20.3 S.5.4. Relationship of Minimum Load Cell Verification Interval to the Scale Division**

45 **Item Under Consideration:**

46 Amend NIST Handbook 44 Scales Code as follows:

1 **S.5.4. Relationship of Minimum Load Cell Verification Interval Value to the Scale Division.** – The
 2 relationship of the value for the minimum load cell verification scale interval, v_{min} , to the verification scale
 3 division, d e , for a specific scale using National Type Evaluation Program (NTEP) certified load cells shall
 4 comply with the following formulae where N is the number of load cells in a single independent¹ weighing/load-
 5 receiving element (such as hopper, railroad track, or vehicle scale weighing/load-receiving elements):

6
 7 (a) $v_{min} \leq \frac{d^* e}{\sqrt{N}}$ for scales without lever systems; and

8
 9
 10 (b) $v_{min} \leq \frac{d^* e}{\sqrt{N} \times (\text{scale multiple})}$ for scales with lever systems.

11
 12
 13 ¹"Independent" means with a weighing/load-receiving element not attached to adjacent elements and with its own
 14 A/D conversion circuitry and displayed weight.

15
 16 [~~*When the value of the scale division, d , is different from the verification scale division, e , for the scale, the value~~
 17 ~~of e must be used in the formulae above.~~]

18 This requirement does not apply to complete weighing/load-receiving elements or scales, which satisfy all the
 19 following criteria:

- 20
 21 - the complete weighing/load-receiving element or scale has been evaluated for compliance with
 22 T.N.8.1. Temperature under the NTEP;
 23
 24 - the complete weighing/load-receiving element or scale has received an NTEP Certificate of
 25 Conformance; and
 26
 27 - the complete weighing/load-receiving element or scale is equipped with an automatic
 28 zero-tracking mechanism which cannot be made inoperative in the normal weighing mode. (A test
 29 mode which permits the disabling of the automatic zero-tracking mechanism is permissible,
 30 provided the scale cannot function normally while in this mode.

31 [Nonretroactive as of January 1, 1994]

32 (Added 1993) (Amended 1996, ~~and~~ 2016, and 20XX)

33 **B2: SCL-20.4 Table 3. Parameters of Accuracy Classes.**

34 **Item Under Consideration:**

35 Amend NIST Handbook 44 Scales Code as follows:

Table 3. Parameters for Accuracy Classes			
<i>Class</i>	<i>Value of the Verification Scale Division e^1 (d or e^1)</i>	<i>Number of Scale⁴ Divisions (n)</i>	
		<i>Minimum</i>	<i>Maximum</i>
SI Units			
<i>I</i>	<i>equal to or greater than 1 mg</i>	<i>50 000</i>	<i>--</i>
<i>II</i>	<i>1 to 50 mg, inclusive</i>	<i>100</i>	<i>100 000</i>
<i>III^{2,5}</i>	<i>equal to or greater than 100 mg</i>	<i>5 000</i>	<i>100 000</i>
	<i>0.1 to 2 g, inclusive</i>	<i>100</i>	<i>10 000</i>
<i>III L³</i>	<i>equal to or greater than 5 g</i>	<i>500</i>	<i>10 000</i>
	<i>equal to or greater than 2 kg</i>	<i>2 000</i>	<i>10 000</i>
<i>III</i>	<i>equal to or greater than 5 g</i>	<i>100</i>	<i>1 200</i>
U.S. Customary Units			
<i>III⁵</i>	<i>0.0002 lb to 0.005 lb, inclusive</i>	<i>100</i>	<i>10 000</i>
	<i>0.005 oz to 0.125 oz, inclusive</i>	<i>100</i>	<i>10 000</i>
	<i>equal to or greater than 0.01 lb</i>	<i>500</i>	<i>10 000</i>
	<i>equal to or greater than 0.25 oz</i>	<i>500</i>	<i>10 000</i>
<i>III L³</i>	<i>equal to or greater than 5 lb</i>	<i>2 000</i>	<i>10 000</i>
<i>III</i>	<i>greater than 0.01 lb</i>	<i>100</i>	<i>1 200</i>
	<i>greater than 0.25 oz</i>	<i>100</i>	<i>1 200</i>

¹ **For Class I and II devices equipped with auxiliary reading means (i.e., a rider, a vernier, or a least significant decimal differentiated by size, shape, or color), the value of the verification scale division “e” is the value of the scale division immediately preceding the auxiliary means. The manufacturer may design a scale such that the verification scale division e does not be equal to the scale division d. To ensure the correct value for e is used, refer to marking requirements in footnotes 3 and 4 to Table S.6.3.a. and Table S.6.3.b.**
(Amended 20XX)

² *A Class III scale marked “For prescription weighing only” may have a verification scale division (e) not less than 0.01 g.*
(Added 1986) (Amended 2003)

³ *The value of ~~a~~ the verification scale division (e) for crane and hopper (other than grain hopper) scales shall be not be less than 0.2 kg (0.5 lb). The minimum number of scale divisions shall be not be less than 1000.*
(Amended 20XX)

⁴ *On a multiple range or multi-interval scale, the number of divisions for each range independently shall not exceed the maximum specified for the accuracy class. The number of scale divisions, n, for each weighing range is determined by dividing the scale capacity for each range by the verification scale division, e, for each range. On a scale system with multiple load-receiving elements and multiple indications, each element considered shall not independently exceed the maximum specified for the accuracy class. If the system has a summing indicator, the n_{max} for the summed indication shall not exceed the maximum specified for the accuracy class.*
(Added 1997)

⁵ *The minimum number of scale divisions for a Class III Hopper Scale used for weighing grain shall be 2000.)*

[Nonretroactive as of January 1, 1986]

(Amended 1986, 1987, 1997, 1998, 1999, 2003, ~~and~~ 2004, and 20XX)

1 **B2: SCL-20.5 Table S.6.3.a. Marking Requirements, Note 3.**

2 **Item Under Consideration:**

3 Amend NIST Handbook 44 Scales Code as follows:

- 4 3. The device shall be marked with the nominal capacity. *The nominal capacity shall be shown together with*
 5 *the value of the scale division “d” (e.g., 15 × 0.005 kg, 30 × 0.01 lb, or capacity = 15 kg, d = 0.005 kg) in*
 6 *a clear and conspicuous manner and be readily apparent when viewing the reading face of the scale*
 7 *indicator unless already apparent by the design of the device. Each scale division value ~~or weight unit~~*
 8 *with its associated nominal capacity shall be marked on multiple range or multi-interval scales. In the*
 9 *absence of a separate marking of the verification scale division “e” (see Note 4), the value of the*
 10 *verification scale division e shall be equal to the value of the scale division d.*
 11 *[Nonretroactive as of January 1, 1983] (amended 20XX)*
 12 *(Amended 2005 and 20XX)*

13 **B2: SCL-20.6 T.N.1.2. Accuracy Classes and T.N.1.3. Scale Division.**

14 **Item Under Consideration:**

15 Amend NIST Handbook 44 Scales Code as follows:

- 16 T.N.1.2. Accuracy Classes. – Weighing devices are divided into accuracy classes according to the number of scale
 17 divisions (n) and the value of the verification scale division (~~d~~) (e).
 18
 19 T.N.1.3. Scale Division. – This Code contains references to two types of scale divisions, the verification scale
 20 division (e) and the scale division (d) (see definitions in Appendix D.). The tolerance for a weighing device is in
 21 the order of magnitude of related to the value of the scale division (d) or the value of the verification scale division (e)
 22 and is generally expressed in terms of ~~d or e~~. Other technical requirements may reference either the verification
 23 scale division (e) or scale division (d) as appropriate. The values of (e) and (d) are chosen by the manufacturer
 24 and are marked on the device pursuant to S.6.3., except that d is not used in reference to an analog device, such
 25 as an equal-arm balance, where the graduations do not correspond to units of weight.

26 **B2: SCL-20.7 Table 7. Maintenance Tolerances**

27 **Item Under Consideration:**

28 Amend NIST Handbook 44 Scales Code as follows:

Table 6. Maintenance Tolerances (All values in this table are in <u>verification</u> scale divisions)				
Tolerance in <u>Verification</u> Scale Divisions				
	1	2	3	5
Class	Test Load			
I	0 - 50 000	50 001 - 200 000	200 001 +	
II	0 - 5 000	5 001 - 20 000	20 001 +	
III	0 - 500	501 - 2 000	2 001 - 4 000	4 001 +
IIIH	0 - 50	51 - 200	201 - 400	401 +
III L	0 - 500	501 - 1 000	(Add 1 d e for each additional 500 d e or fraction thereof)	

1 **B2: SCL-20.8 Table 8. Recommended Minimum Load**

2 **Item Under Consideration:**

3 Amend NIST Handbook 44 Scales Code as follows:

Table 8. Recommended Minimum Load		
Class	Value of Scale Division (d or e*)*	Recommended Minimum Load (d or e*)*
I	equal to or greater than 0.001 g	100
II	0.001 g to 0.05 g, inclusive	20
III	equal to or greater than 0.1 g	50
III L	All**	20
III	All	50
III	All	10

*For Class I and II devices equipped with auxiliary reading means (i.e., a rider, a vernier, or a least significant decimal differentiated by size, shape or color), the value of the verification scale division “e” is the value of the scale division immediately preceding the auxiliary means. For Class III and III L devices the value of “e” is specified by the manufacturer as marked on the device; “e” must be less than or equal to “d.” *Scales manufacturers are permitted to design scales where the value a verification scale division e differs from the displayed scale division d. If the marked value of e is less than the value of d, use e in interpreting the Table. In all other cases use the value of d. Refer to marking requirements for d and e in footnotes 3 and 4 to Table S.6.3.a. and Table S.6.3.b. (Amended 20XX)*

**A minimum load of 10 g is recommended for a weight classifier marked in accordance with a statement identifying its use for special applications.

(Amended 1990) (Amended 20XX)

4
5 **Background/Discussion:** See Appendix A, Page S&T-A79.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input checked="" type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee agrees with the body that the item has merit and should be assigned a Developing status. No comments were heard during open hearings.</p>

7
8 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
9 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **SCL – SCALES**

2 **SCL-17.1 I S.1.8.5. Recorded Representations, Point of Sale Systems, Appendix D-**
3 **Definitions: tare**

4 **Source:**
5 Kansas and Minnesota

6 **Purpose:**
7 Provide consumers the same opportunity, to be able to easily verify whether or not tare is taken on items weighed at
8 a checkout stand using a POS system, as is currently afforded them when witnessing items being weighed and priced
9 in their presence using other scales in the store.

10 **Item Under Consideration:**
11 *[Note: At the 2019 NCWM Annual Meeting, the Committee agreed with the assigned Task Group (TG) to change the*
12 *status of this proposal from Assigned to Informational. The TG presented the Committee with two versions for revising*
13 *the original proposal. Both versions are shown below. The Committee accepted both versions with the intent of*
14 *soliciting feedback from the 2019 Fall Regional meetings on which version is preferred.]*

15
16 Amend NIST Handbook 44, Scales Code as follows:

17
18 **1. RETROACTIVE VERSION:**
19

20 **S.1.8.5. Recorded Representations, Point-of-Sale Systems.** – The sales information recorded by cash
21 registers when interfaced with a weighing element shall contain the following information for items weighed
22 at the checkout stand:¹

- 23 (a) the net weight;¹
- 24 (b) the unit price;^{1,2}
- 25 (c) the total price; and
- 26 (d) the product class or, in a system equipped with price look-up capability, the product name or code
27 number.

28 **In addition, the tare weight shall be recorded by all cash registers interfaced with a weighing element**
29 **for items weighed at the checkout stand as of January 1, 20XX.**
30 **(Amended 20XX)**

31
32 **FOOTNOTES 1 AND 2 FOR EITHER VERSION (RETROACTIVE OR NONRETROACTIVE)**
33

34 ¹Weight values shall be **adequately defined as gross, tare, and/or net upon any two or more of these**
35 **values appearing on the receipt. Acceptable abbreviations include, but are not limited to, G & GR**
36 **(gross), T & TA (tare), and N & NT (net). The unit of weight shall be** identified by **as** kilograms, kg,
37 grams, g, ounces, oz, pounds, or lb. ~~*The “#” symbol is not acceptable.*~~
38 ~~*[Nonretroactive as of January 1, 2006]*~~

39 ²For devices interfaced with scales indicating in metric units, the unit price may be expressed in price per
40 100 grams.
41 (Amended 1995, ~~and~~ 2005, **and 20XX**)

42 ***THE FOLLOWING TEXT CAN BE INSERTED AS REPLACEMENT TO THE ABOVE ONCE**
43 **THE PRINTING OF THE TARE WEIGHT INFORMATION BECOMES ENFORCEABLE:**
44

¹Weight values shall be adequately defined as gross, tare, and/or net. Acceptable abbreviations include, but are not limited to, G & GR (gross), T & TA (tare), and N & NT (net). The unit of weight shall be identified by as kilograms, kg, grams, g, ounces, oz, pounds, or lb. ~~The “#” symbol is not acceptable.~~
[Nonretroactive as of January 1, 2006]

²For devices interfaced with scales indicating in metric units, the unit price may be expressed in price per 100 grams.
(Amended 1995, ~~and~~ 2005, and 20XX)

2. NONRETROACTIVE VERSION:

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:

- (a) the net weight;¹
- (b) the unit price;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~~
- (e) the tare weight.

[Non-retroactive as of January 1, 20XX]
(Amended 20XX)

FOOTNOTES 1 AND 2 FOR EITHER VERSION (RETROACTIVE OR NONRETROACTIVE)

¹Weight values shall be adequately defined as gross, tare, and/or net upon any two or more of these values appearing on the receipt. Acceptable abbreviations include, but are not limited to, G & GR (gross), & TA (tare), and N & NT (net). The unit of weight shall be identified by as kilograms, kg, grams, g, ounces, oz, pounds, or lb. ~~The “#” symbol is not acceptable.~~
[Nonretroactive as of January 1, 2006]

²For devices interfaced with scales indicating in metric units, the unit price may be expressed in price per 100 grams.
(Amended 1995, ~~and~~ 2005, and 20XX)

Background/Discussion: See Appendix A, Page S&T-A86.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p>

The Committee agrees with the body that the changes proposed are unnecessary and that the item should be withdrawn. During open hearings, the Committee heard from Mr. Jim Willis (NY) who believes the proposal will cause consumer confusion because while the tare is printed, there is no guarantee that it will be correct. Mr. John McGuire (NJ) agrees with the comments from NY.

1
2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **SCL-16.1 A Sections Throughout the Code to Include Provisions for Commercial Weigh-in-**
5 **Motion Vehicle Scale Systems**

6 **Source:**
7 Rinstrum, Inc. and Right Weigh Innovations (2016)

8 **Purpose:**
9 Recognize commercial Weigh-in-Motion vehicle scale systems.

10 **Item Under Consideration:**
11 Amend NIST Handbook 44 Scales Code as follows:

12 **S.1. Design of Indicating and Recording Elements and of Recorded Representations.**

13 ...

14 **S.1.1.1. Digital Indicating Elements.**

15 (a) A digital zero indication shall represent a balance condition that is within $\pm \frac{1}{2}$ the value of the
16 scale division.

17 (b) *A digital indicating device shall either automatically maintain a “center-of-zero” condition to*
18 *$\pm \frac{1}{4}$ scale division or less, or have an auxiliary or supplemental “center-of-zero” indicator that*
19 *defines a zero-balance condition to $\pm \frac{1}{4}$ of a scale division or less. A “center-of-zero”*
20 *indication may operate when zero is indicated for gross and/or net mode(s).*
21 *[Nonretroactive as of January 1, 1993]*

22 (a) **Weigh-in-Motion Vehicle Scales Zero or Ready Indication.**

23 (1) **Provision shall be made to indicate or record either a zero or ready condition.**
24 **A zero or ready condition may be indicated by other than a continuous digital zero**
25 **indication, provided that an effective automatic means is provided to inhibit a measuring**
26 **operation when the device is in an out-of-zero or non-ready condition.**

27 (Amended 1992 ~~and~~ 2008, and 20XX)

28 ...

29 **S.1.8. Computing Scales.**

30 ...

31 **S.1.8.6. Values to be Recorded, Weigh-In-Motion Vehicle Scales. – At a minimum, the following**
32 **values shall be printed and/or stored electronically for each vehicle weighment:**

33

- 1 (a) **lane identification (required if more than one lane at the site has the ability to weigh a**
- 2 **vehicle in motion);**
- 3 (b) **weight and sequence of each axle;**
- 4 (c) **total vehicle weight;**
- 5 (d) **time and date.**
- 6 **(Added 20XX)**

7 ...

8 **S.1.14. Weigh-In-Motion Vehicle Scale: Operational Limitation. - A weigh-in-motion vehicle scale**

9 **shall not provide a weight indication or recorded representation if any operational limitation**

10 **is exceeded.**

11 **(Added 20XX)**

12 ...

13 **S.2. Design of Balance, Tare, Level, Damping, and Arresting Mechanisms.**

14 **S.2.1. Zero-Load Adjustment.**

15 **S.2.1.1. General.** – A scale shall be equipped with means by which the zero-load balance may be

16 adjusted. Any loose material used for this purpose shall be enclosed so that it cannot shift in position

17 and alter the balance condition of the scale.

18 Except for an initial zero-setting mechanism, an automatic zero adjustment outside the limits specified

19 in S.2.1.3. Scales Equipped with an Automatic Zero-Tracking Mechanism is prohibited.

20 (Amended 2010)

21 **S.2.1.2. Scales used in Direct Sales.** – A manual zero-setting mechanism (except on a digital scale with

22 an analog zero-adjustment mechanism with a range of not greater than one scale division) shall be

23 operable or accessible only by a tool outside of and entirely separate from this mechanism, or it shall be

24 enclosed in a cabinet. Except on Class I or II scales, a balance ball shall either meet this requirement or

25 not itself be rotatable.

26 A semiautomatic zero-setting mechanism shall be operable or accessible only by a tool outside of and

27 separate from this mechanism or it shall be enclosed in a cabinet, or it shall be operable only when the

28 indication is stable within plus or minus:

- 29 (a) 3.0 scale divisions for scales of more than 2000 kg (5000 lb) capacity in service prior to
- 30 January 1, 1981, and for all axle load, railway track, **weigh-in-motion vehicle systems,** and
- 31 vehicle scales; or
- 32 **(Amended 20XX)**

- 33 (b) 1.0 scale division for all other scales.

34 **S.2.1.3. Scales Equipped with an Automatic Zero-Tracking Mechanism.**

35 **S.2.1.3.1. Automatic Zero-Tracking Mechanism for Scales Manufactured Between**

36 **January 1, 1981, and January 1, 2007.** – The maximum load that can be “rezeroed,” when either

37 placed on or removed from the platform all at once under normal operating conditions, shall be for:

- 38 (a) bench, counter, and livestock scales: 0.6 scale division;
- 39

1 (b) vehicle, weigh-in-motion vehicle systems, axle load, and railway track scales: 3.0 scale
2 divisions; and
3 (Amended 20XX)

4 (c) all other scales: 1.0 scale division.
5 (Amended 2005)

6 **S.2.1.3.2. Automatic Zero-Tracking Mechanism for Scales Manufactured on or after**
7 **January 1, 2007.** – The maximum load that can be “rezeroed,” when either placed on or removed
8 from the platform all at once under normal operating conditions, shall be:

9 (a) for vehicle, weigh-in-motion vehicle systems, axle load, and railway track scales:
10 3.0 scale divisions; and

11 (b) for all other scales: 0.5 scale division.
12 (Added 2005)

13 ...

14 **S.2.5. Damping Means.** – An automatic-indicating scale and a balance indicator shall be equipped with
15 effective means to damp oscillations and to bring the indicating elements quickly to rest.

16 **S.2.5.1. Digital Indicating Elements.** – Except for weigh-in-motion vehicle systems being operated
17 in a dynamic mode, Digital–digital indicating elements equipped with recording elements shall be
18 equipped with effective means to permit the recording of weight values only when the indication is stable
19 within plus or minus:
20 (Amended 20XX)

21 (a) 3.0 scale divisions for scales of more than 2000 kg (5000 lb) capacity in service prior to
22 January 1, 1981, hopper (other than grain hopper) scales with a capacity exceeding 22 000 kg
23 (50 000 lb), and for all vehicle, axle load, livestock, and railway track scales; and

24 (b) 1.0 scale division for all other scales.

25 The values recorded shall be within applicable tolerances.
26 (Amended 1995)

27 ...

28 **N.7. Weigh-in-Motion Vehicle Scale.**

29 **N.7.1. Static Testing.** – **A Weigh-in-Motion Vehicle Scale shall be tested statically, whenever possible,**
30 **using field standard weights / test loads in accordance with Table 4, uniformly distributed on the scale**
31 **platform. Additionally, for scale platforms with a length of less than 4 feet a test load not greater than**
32 **one half of section capacity shall be positioned between the centerline and left and right side**
33 **respectively. Scale platforms with a length of 4 feet or greater shall be tested in accordance with**
34 **N.1.3.3.1. Class III acceptance and maintenance tolerance as shown in Table 6. shall apply.**

35 **N.7.2. Dynamic Testing.** – **The Dynamic test for a Weigh-in-Motion-Vehicle Scale shall simulate the**
36 **normal intended use as closely as possible i.e. test as used. The minimum test shall consist of a**
37 **vehicle(s), loaded with known field standards, dynamically weighed three consecutive times. The**
38 **known field standards should then be unloaded and three additional dynamic weighments of the empty**
39 **vehicle(s) should be recorded. Additionally, for scale platform widths greater than 11 feet, at least one**
40 **of the loaded vehicle runs and empty vehicle runs shall be made near the left edge and right edge of**

1 the scale platform respectively. Class III L acceptance and maintenance tolerance as shown in Table
2 6. shall apply to the known field test standards load minus the calculated value (loaded weight –
3 unloaded weight = calculated value) the Table 6 tolerance values shall be based on the value of the
4 known test load.

5 (Added 20XX)

6 ...

7 **T.N.3. Tolerance Values.**

8 ...

9 **T.N.3.X. Tolerances for Weigh-in-Motion Vehicle Scales. –**

10 **T.N.3.X.1. Static Weighing. -Acceptance tolerance shall be one-half maintenance tolerance**
11 **shown in Table 6. Maintenance Tolerances.**

12 **T.N.3.X.2 Dynamic Weighing. - Acceptance tolerance shall be one-half maintenance tolerance shown**
13 **in Table 6. Maintenance Tolerances.**

14 (Added 20XX)

15 ...

16 ...

17 **UR.1. Selection Requirements.** – Equipment shall be suitable for the service in which it is used with respect to
18 elements of its design, including but not limited to, its capacity, number of scale divisions, value of the scale
19 division or verification scale division, minimum capacity, and computing capability.¹

20 ...

21 **UR.1.6. Recording Element, Class III L Weigh-In-Motion Vehicle Scales. – Class III L Weigh-In-**
22 **Motion Vehicle Scales must be equipped with a recording element.**

23 (Added 20XX)

24 ...

25 **UR.2.6. Approaches.**

26 *UR.2.6.1. Vehicle Scales. – On the entrance and exit end(s) of a vehicle scale, there shall be a straight*
27 *approach as follows:*
28

29 (a) *the width at least the width of the platform,*

30 (b) *the length at least one-half the length of the platform but not required to be more than 12 m*
31 *(40 ft), and*

¹ Purchasers and users of scales such as railway track, hopper, and vehicle scales should be aware of possible additional requirements for the design and installation of such devices.

(Footnote Added 1995)

1 (c) not less than 3 m (10 ft) of any approach adjacent to the platform shall be in the same plane as
2 the platform. Any slope in the remaining portion of the approach shall ensure (1) ease of
3 vehicle access, (2) ease for testing purposes, and (3) drainage away from the scale.

4 In addition to (a), (b), and (c), scales installed in any one location for a period of six months or more
5 shall have not less than 3 m (10 ft) of any approach adjacent to the platform constructed of concrete or
6 similar durable material to ensure that this portion remains smooth and level and in the same plane as
7 the platform; however, grating of sufficient strength to withstand all loads equal to the concentrated
8 load capacity of the scale may be installed in this portion.

9 [Nonretroactive as of January 1, 1976]

10 (Amended 1977, 1983, 1993, 2006, and 2010)

11 **UR.2.6.2. Axle-Load Scales.** – At each end of an axle-load scale there shall be a straight paved approach
12 in the same plane as the platform. The approaches shall be the same width as the platform and of
13 sufficient length to insure the level positioning of vehicles during weight determinations.

14 **UR.2.6.3. Weigh-in-Motion Vehicle Scales.** - **At each end of a Weigh-in-Motion Vehicle Scale there**
15 **shall be a straight approach in the same plane as the platform. The approaches shall be the same**
16 **width as the platform and of sufficient length to insure the level positioning of vehicles during**
17 **weight determinations. Both approaches shall be made of concrete or similar durable material**
18 **(e.g., steel).**

19 **(Added 20XX)**

20 ...

21 **UR.3.2. Maximum Load.** – A scale shall not be used to weigh a load of more than the nominal capacity of
22 the scale.

23 **UR.3.2.1. Maximum Loading for Vehicle Scales.** – A vehicle scale shall not be used to weigh loads
24 exceeding the maximum load capacity of its span as specified in Table UR.3.2.1. Span Maximum Load.

25 (Added 1996)

26 **Note: UR.3.2.1. is not applicable to Weigh-In-Motion Vehicle Scales.**

27 **(Added 20XX)**

28 ...

29 **UR.3.3. Single-Draft Vehicle Weighing.** A vehicle or a coupled-vehicle combination shall be commercially
30 weighed on a vehicle scale only as a single draft. That is, the total weight of such a vehicle or combination
31 shall not be determined by adding together the results obtained by separately and not simultaneously
32 weighing each end of such vehicle or individual elements of such coupled combination. However, the weight
33 of:

34 (a) a coupled combination may be determined by uncoupling the various elements (tractor, semitrailer,
35 trailer), weighing each unit separately as a single draft, and adding together the results; or

36 (b) a vehicle or coupled-vehicle combination may be determined by adding together the weights
37 obtained while all individual elements are resting simultaneously on more than one scale platform.

38 **Note:** This paragraph does not apply to **weigh-in-motion vehicle scales**, highway-law-enforcement scales
39 and scales used for the collection of statistical data.

40 (Added 1992) **(Amended 20XX)**

41 ...

1 **UR.3.7. Minimum Load on a Vehicle Scale or Weigh-in-Motion Vehicle Scale.** – A vehicle scale **or**
 2 **weigh-in-motion vehicle scale** shall not be used to weigh net loads smaller than:

3 (a) 10 d when weighing scrap material for recycling or weighing refuse materials at landfills and
 4 transfer stations; and

5 (b) 50 d for all other weighing.

6 As used in this paragraph, scrap materials for recycling shall be limited to ferrous metals, paper (including
 7 cardboard), textiles, plastic, and glass.
 8 (Amended 1988, 1992, ~~and 2006,~~ **and 20XX**)

9 ...

10 **UR.3.9. Use of Manual Weight Entries.** – Manual gross or net weight entries are permitted for use in the
 11 following applications only when:

12 (a) a point-of-sale system interfaced with a scale is giving credit for a weighed item;

13 (b) an item is pre-weighed on a legal for trade scale and marked with the correct net weight;

14 (c) a device or system is generating labels for standard weight packages;

15 (d) postal scales or weight classifiers are generating manifests for packages to be picked up at a later
 16 time; or

17 (e) livestock and vehicle scale **or weigh-in-motion vehicle scale** systems **that** generate weight tickets
 18 to correct erroneous tickets.

19 (Added 1992) (Amended 2000 ~~and 2004,~~ **and 20XX**)

20 **Background/Discussion:** See Appendix A, Page S&T-A88.
 21

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input type="checkbox"/>	Recommend as a Voting Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Information Item on the NCWM agenda
<input checked="" type="checkbox"/>	Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i>
<input type="checkbox"/>	Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i>
<input type="checkbox"/>	Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i>
<input type="checkbox"/>	No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i>	
The Committee agrees with the body that this item has merit and should remain Assigned. During open hearing, the Committee heard comments from Mr. Dick Suiter (Richard Suiter Consulting) as a WIM Task Group member. He indicated that TG is waiting for more direction from S&T committee. The major concerns are that test data given by submitter was not witnessed by a weights and measures official.	

22
 23 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 24 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **SCL-19.2 I T.N.3.6. Coupled-In-Motion Railroad Weighing Systems., T.N.4.6. Time**
 2 **Dependence (Creep) for Load Cells during Type Evaluation., UR.5. Coupled-in-**
 3 **Motion Railroad Weighing Systems. and Appendix D – Definitions: point-based**
 4 **railroad weighing systems.**

5 **NOTE: This item replaces the 2018 Items, Block 2 items: SCL-1 & SCL-2, and 2017 individual items 3200-4**
 6 **and 3200-8.**

7 **Source:**
 8 Meridian Engineers Pty Ltd.

9 **Purpose:**
 10 Replace the 2018 Block 2 Items: SCL-1 and SCL-2 with new proposals to:
 11 a) Increase the tolerance for dynamic weighments of unit trains,
 12 b) Provide an exception from “creep” tolerances for point-based in-motion railroad weighing systems,
 13 c) Require the user of coupled-in-motion railroad weighing systems to provide a static scale in close proximity
 14 for testing purposes, and
 15 d) Add a definition for Point-Based Railroad Weighing Systems to support those proposals.

16 **Item Under Consideration:**
 17 Amend NIST Handbook 44 Scales Code as follows:

18 **UR.5. Coupled-in-Motion Railroad Weighing Systems. –**

19 (a) A coupled-in-motion weighing system placed in service on or after January 1, 1991, should be tested in
 20 the manner in which it is operated, with the locomotive either pushing or pulling the cars at the designed
 21 speed and in the proper direction. The cars used in the test train should represent the range of gross
 22 weights that will be used during the normal operation of the weighing system. Except as provided in
 23 N.4.2. Weighing Systems Placed in Service Prior to January 1, 1991 and Used to Weigh Trains of Ten
 24 or More Cars and N.4.3.(a) Weighing Systems Placed in Service on or After January 1, 1991, and Used
 25 to Weigh Trains of Ten or More Cars, normal operating procedures should be simulated as nearly as
 26 practical. Approach conditions for a train length in each direction of the scale site are more critical for
 27 a weighing system used for individual car weights than for a unit-train-weights-only facility and should
 28 be considered prior to installation.
 29

30 (b) For coupled-in-motion weighing systems used only for dynamic weighing, the user shall provide
 31 an alternate certified scale to be used as a reference scale. The weights and measures authority
 32 having jurisdiction over the weighing system shall determine if the reference scale provided is
 33 suitable in terms of size, capacity, minimum division, performance requirements, and the
 34 proximity to the weighing system under evaluation. The reference weight cars weighed on the
 35 reference scale may then be used for calibration and annual inspection by the jurisdiction with
 36 statutory authority for the system.

37 (Added 1990) (Amended 1992 and 20XX)

38 And add the following definition to NIST Handbook 44 Appendix D – Definitions:

39 Point-based railroad weighing systems. – An In-Motion-Railroad Weighing System designed to weigh
 40 wheel(s) of a railway car when centered on the load sensor within a weighing zone typically of 2 inches or
 41 less. The weight of the wheels are added to obtain the total weight of the cars and train which are used for
 42 any transaction.

43 **Background/Discussion:** See Appendix A, Page S&T-A90.
 44

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>	
Comments and justification for the regional recommendation to NCWM: (This will appear in NCWM reports)	
The Committee agrees with the body and finds merit in this item, sees it as fully developed and recommends it be assigned Voting status. Dick Suiter (Richard Suiter Consulting) commented on behalf of submitter, Meridian Engineers, and provided a written statement that is included in the Appendix.	

1
 2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **SCL-20.9 S.1.1.3. Zero Indication, Load Receiving Elements Separate from Weighing**
 5 **Elements. and Appendix D – Definitions: no load reference value**

6 **Source:**
 7 Kansas Department of Agriculture.

8 **Purpose:**
 9 Facilitate more accurate net weight determinations for systems utilizing a load-receiving element separate from a
 10 weighing element.

11 **Item Under Consideration:**
 12 Amend NIST Handbook 44 Scales Code as follows:

13 **S.1.1.3 Zero Indication, Load-Receiving Elements Separate from Weighing Elements. – Provisions shall be**
 14 **made to indicate and record a no-load reference value and, if the no-load reference value is a zero-value**
 15 **indication, to indicate and record an out-of-balance condition on both sides of zero.**
 16 **(Nonretroactive as of January 1st, 20XX)**
 17

18 **S.1.1.3.1 Weighing Sequence. – For weighing systems used to receive (weigh in), the no-load reference**
 19 **value shall be determined and recorded only at the beginning of each weighing cycle. For systems used to**
 20 **deliver (weigh out), the no-load reference value shall be determined and recorded only after the gross load**
 21 **reference value for each weighing cycle has been indicated and recorded.**
 22 **(Nonretroactive as of January 1st, 20XX)**
 23

24 **S.1.1.3.2 Recording Sequence. – Provision shall be made so that all weight values are indicated until the**
 25 **completion of the recording of the indicated value.**
 26 **(Nonretroactive as of January 1st, 20XX)**

1 **S.1.1.3.3 Zero-Load Adjustment.** – *The weighing system shall be equipped with manual or semiautomatic*
 2 *means by which the zero-load balance or no-load reference value indication may be adjusted. Automatic*
 3 *zero-tracking and automatic zero-setting mechanisms are prohibited.*
 4 *(Nonretroactive as of January 1st, 20XX)*

5 And amend Appendix D – Definitions as follows:

6 **no-load reference value.** – A positive **or negative** weight value indication with no load in the load-
 7 receiving element of a scale. (~~Used with automatic bulk weighing systems and certain single draft,~~
 8 ~~manually operated receiving hopper scales installed below grade and used to receive grain.~~) [2.20, 2.22]

9 **Background/Discussion:** See Appendix A, Page S&T-A93.
 10

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input checked="" type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body take no position on this item as no comments were heard during open hearing.</p>

11 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 12 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.
 13

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

16 **Source:**
 17 New York Department of Agriculture and Markets

18 **Purpose:**
 19 Remove the specification prohibiting the value of “d” from differing from the value of “e” for class I and II scales.

20 **Item Under Consideration:**
 21 Amend NIST Handbook 44 Scales Code as follows:

22 ~~**S.1.2.2.2. Class I and II Scales Used in Direct Sales.**— *When accuracy Class I and II scales are used*~~
 23 ~~*in direct sale applications the value of the displayed division “d” shall be equal to the value of the*~~
 24 ~~*verification scale interval “e.”*~~
 25 ~~*[Nonretroactive as of January 1, 2020; to become retroactive as of January 1, 2023]*~~
 26 ~~*(Added 2017)*~~

27 ~~**S.1.2.2.3. Deactivation of a “d” Resolution.**— *It shall not be possible to deactivate the “d” resolution*~~
 28

~~on a Class I or II scale equipped with a value of “d” that differs from “e” if such action affects the scale’s ability to round digital values to the nearest minimum unit that can be indicated or recorded as required by paragraph G-S.5.2.2. Digital Indication and Representation. (Added 2018)~~

S.1.2.2.2. Class III and III Scales. The value of “e” is specified by the manufacturer as marked on the device. Except for dynamic monorail scales, “e” must be less than or equal to “d”.

Background/Discussion: See Appendix A, Page S&T-A94.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body find merit in this item and finds it fully developed and agrees it should be assigned a voting status. Submitter. Mr. Jim Willis (NY) presented a short power point explaining the unintended consequences of 2.20.S.1.2.2.2 in 2019 HB44 for certain industries. He also stated that NY will not enforce the current language in HB44 as it puts undue burden on those that have used NTEP certified scales for decades and now will be forced to buy new devices. Mr. John McGuire (NJ) asked what the difference is between SCL-20.10 and SCL-20.11? Mr. Steve Timar (NY) says the exception in 20.11 has a carve out just for jewelry scales, but submitter wants language to return to 2017 HB44. Mr. John McGuire (NJ) supports submitters position.</p>

Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

SCL-20.11 S.1.2.2.2. Class I and II Scales Used in Direct Sales.

Source:
Mettler Toledo, LLC

Purpose:
Clarify that this specification is not applicable to jewelers' scales and that it does apply to the other markets for which it was intended when modified in 2019, primarily for direct sales of cannabis.

Item Under Consideration:
Amend NIST Handbook 44 Scales Code as follows:

S.1.2.2.2. Class I and II Scales Used in Direct Sales. – Except for jewelers' scales, ~~W~~when accuracy Class I and II scales are used in direct sale applications, the value of the displayed division “d” shall be equal to the value of the verification scale interval “e.

[Nonretroactive as of January 1, 2020~~3~~; to become retroactive as of January 1, 2023]

Background/Discussion: See Appendix A, Page S&T-A94.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item is redundant and would cause a special carve out for devices used in certain industries. The Committee believes this item should be withdrawn and urges the submitter to work with the submitter of SCL-20.10. Mr. Ethan Bogren (Westchester County, NY), Mr. John McGuire (NJ), Mr. Jim Willis (NY) and Mr. Marc Paquette (VT) all voiced concerns about the redundancy of the item. Mr. Dick Suiter (Richard Suiter Consulting) commented that the Southern Weights and Measures Association recommended also including grain test scales in this proposal.</p>

Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

SCL-20.12 Multiple Sections to Add Vehicle Weigh-in-Motion to the Code and Appendix D – Definitions; vehicle scale and weigh-in-motion vehicle scale.

Source:
Mettler Toledo, LLC

Purpose:
Include single draft Weigh-in-Motion scales as a legal for trade commercial Class IIIIL device.

Item Under Consideration:
Amend NIST Handbook 44 Scales Code as follows:

S.1. Design of Indicating and Recording Elements and of Recorded Representations.

...

S.1.2.1. Digital Indicating Scales, Units.

S.1.2.1.1. - Value of Other Units of Measure for Weigh-in-Motion Vehicle Scales.

S.1.2.1.1.1. Speed. – Vehicle speeds shall be measured in miles per hour or kilometers per hour.

(Added 20XX)

1
2 ...
3

S.1.8. Computing Scales.

5
6 ...
7

S.1.8.6. Values to be Recorded, Weigh-In-Motion Vehicle Scales. – At a minimum, the following values shall be printed and/or stored electronically for each vehicle weighment:

10
11
12
13
14
15
16
17

(e) **lane identification (required if more than one lane at the site has the ability to weigh a vehicle in motion);**

(b) **vehicle speed**

(c) **vehicle direction**

18
19

(d) **total vehicle weight;**

20
21

(e) **time and date.**

22
23
24 ...
25

(Added 20XX)

26
27

S.1.14. Weigh-in-Motion Vehicle Scales Operational Limitations.

28
29
30
31

S.1.14.1. Identification of a Fault. – Fault conditions shall be presented to the operator in a clear and unambiguous means. The following fault conditions as well as others may be identified:

32
33

(a) Vehicle speed is below the minimum or above the maximum speed as specified.

(b) Direction of vehicle is not valid for this installation.

34
35
36
37 ...
38

(Added 20XX)

39
40

S.2. Design of Balance, Tare, Level, Damping, and Arresting Mechanisms.

41
42

S.2.1. Zero-Load Adjustment.

43
44
45
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S.2.1.1. General. – A scale shall be equipped with means by which the zero-load balance may be adjusted. Any loose material used for this purpose shall be enclosed so that it cannot shift in position and alter the balance condition of the scale.

1 Except for an initial zero-setting mechanism, an automatic zero adjustment outside the limits specified
2 in S.2.1.3. Scales Equipped with an Automatic Zero-Tracking Mechanism is prohibited.
3 (Amended 2010)

4 **S.2.1.2. Scales used in Direct Sales.** – A manual zero-setting mechanism (except on a digital scale with
5 an analog zero-adjustment mechanism with a range of not greater than one scale division) shall be
6 operable or accessible only by a tool outside of and entirely separate from this mechanism, or it shall be
7 enclosed in a cabinet. Except on Class I or II scales, a balance ball shall either meet this requirement or
8 not itself be rotatable.
9

10 A semiautomatic zero-setting mechanism shall be operable or accessible only by a tool outside of and
11 separate from this mechanism or it shall be enclosed in a cabinet, or it shall be operable only when the
12 indication is stable within plus or minus:
13

14 (b) 3.0 scale divisions for scales of more than 2000 kg (5000 lb) capacity in service prior to
15 January 1, 1981, and for all axle load, railway track, weigh-in-motion vehicle, and vehicle
16 scales; or
17 (Amended 20XX)
18

19 (b) 1.0 scale division for all other scales.
20

21 **S.2.1.3. Scales Equipped with an Automatic Zero-Tracking Mechanism.**
22

23 **S.2.1.3.1. Automatic Zero-Tracking Mechanism for Scales Manufactured Between**
24 **January 1, 1981, and January 1, 2007.** – The maximum load that can be “rezeroed,” when either
25 placed on or removed from the platform all at once under normal operating conditions, shall be for:
26

27 (c) bench, counter, and livestock scales: 0.6 scale division;
28

29 (d) vehicle, weigh-in-motion vehicle, axle load, and railway track scales: 3.0 scale divisions;
30 and
31 (Amended 20XX)
32

33 (d) all other scales: 1.0 scale division.
34 (Amended 2005)
35

36 **S.2.1.3.2. Automatic Zero-Tracking Mechanism for Scales Manufactured on or after**
37 **January 1, 2007.** – The maximum load that can be “rezeroed,” when either placed on or removed
38 from the platform all at once under normal operating conditions, shall be:
39

40 (c) for vehicle, weigh-in-motion vehicle, axle load, and railway track scales: 3.0 scale
41 divisions; and
42 (Amended 20XX)
43

44 (d) for all other scales: 0.5 scale division.
45 (Added 2005)
46

47 ...
48

49 **S.2.5. Damping Means.** – An automatic-indicating scale and a balance indicator shall be equipped with
50 effective means to damp oscillations and to bring the indicating elements quickly to rest.
51

52 **S.2.5.1. Digital Indicating Elements.** – Except for weigh-in-motion vehicle scales, Digital-digital
53 indicating elements equipped with recording elements shall be equipped with effective means to permit
54 the recording of weight values only when the indication is stable within plus or minus:
55 (Amended 20XX)
56

(a) 3.0 scale divisions for scales of more than 2000 kg (5000 lb) capacity in service prior to January 1, 1981, hopper (other than grain hopper) scales with a capacity exceeding 22 000 kg (50 000 lb), and for all vehicle, **weigh-in-motion vehicle**, axle load, livestock, and railway track scales; and

(b) 1.0 scale division for all other scales.

The values recorded shall be within applicable tolerances.
(Amended 1995)

S.6. Marking Requirements

Table S.6.3.a. Marking Requirements					
To Be Marked With ↓	Weighing Equipment				
	Weighing, Load-Receiving, and Indicating Element in Same Housing or Covered on the Same CC¹	Indicating Element not Permanently Attached to Weighing and Load-Receiving Element or Covered by a Separate CC	Weighing and Load-Receiving Element Not Permanently Attached to Indicating Element or Covered by a Separate CC	Load Cell with CC (11)	Other Equipment or Device (10)
Manufacturer's ID (1)	X	X	X	X	X
Model Designation and Prefix (1)	X	X	X	X	X
Serial Number and Prefix (2)	X	X	X	X	X (16)
Certificate of Conformance Number (CC) (23)	X	X	X	X	X (23)
Accuracy Class (17)	X	X (8)	X (19)	X	
Nominal Capacity (3)(18)(20)	X	X	X		
Value of Scale Division, "d" (3)	X	X			
Value of "e" (4)	X	X			
Temperature Limits (5)	X	X	X	X	
Concentrated Load Capacity (CLC) (12)(20)(22)		X	X (9)		
Special Application (13)	X	X	X		
Maximum Number of Scale Divisions (n_{max}) (6)		X (8)	X (19)	X	
Minimum Verification Scale Division (e_{min})			X (19)		

Table S.6.3.a. Marking Requirements					
“S” or “M” (7)				X	
Direction of Loading (15)				X	
Minimum Dead Load				X	
Maximum Capacity				X	
<u>Minimum and Maximum Speed (25)</u>		<u>X</u>	<u>X</u>		
<u>Vehicle Direction Capability (26)</u>		<u>X</u>	<u>X</u>		
Safe Load Limit				X	
Load Cell Verification Interval (v _{min}) (21)				X	
Section Capacity and Prefix (14)(20)(22)(24)		X	X		

(Added 1990) (Amended 1992, 1999, 2000, 2001, 2002, 2004 **and 20XX**)

Table S.6.3.b. Notes for Table S.6.3.a. Marking Requirements	
<u>25. Weigh-in-Motion Vehicle Scales must be marked with minimum and maximum speed limitations. (Added 20XX)</u>	
<u>26. Weigh-in-Motion Vehicle Scales must be marked with direction capability (uni-directional, bi-directional). (Added 20XX)</u>	

1
2 ...

N.6. **Nominal Capacity of Prescription Scales.** – The nominal capacity of a prescription scale shall be assumed to be one-half apothecary ounce, unless otherwise marked. (Applicable only to scales not marked with an accuracy class.)

N.7. Weigh-in-Motion Vehicle Scales Test Procedures.

N.7.1. Selection of Test Vehicles. – All testing associated with the procedures described in each of the subparagraphs of N.7.4. shall be performed with a minimum of two test vehicles.

N.7.1.1. Test vehicles should be representative of the vehicles weighed on the scale typical to the system’s daily operation.

N.7.2. Test Loads

N.7.2.1. Reference vehicles. – Test vehicles used for dynamic testing (reference vehicles) shall be weighed empty and also weighed loaded to at least 85% of their legal maximum Gross Vehicle Weight. The “load” shall be non-shifting and shall be positioned to present as close as possible, an equal side-to-side load.

N.7.2.2. Test Loads. – All other test loads shall use certified test weights.

24

N.7.3. Test Speeds. – Dynamic tests shall be conducted at the minimum operating speed, maximum operating speed, and middle of the operating speed range that are specified for the Weigh-in-Motion vehicle scale.

N.7.4 Dynamic Test Procedures

N.7.4.1. Testing for a Weigh-in Motion-Vehicle Scale shall simulate the normal intended use as closely as possible i.e. test as used.

N.7.4.2. The tests shall be conducted using the reference vehicles defined in N.7.1. Selection of Test Vehicles.

N.7.4.3. The tests shall consist of a minimum of 10 runs for each test vehicle at the speeds as stated in N.7.3. Test Speeds.

N.7.4.4. Tests should include empty and loaded vehicles, certified weights should be used for loaded vehicles.

N.7.4.5. Direction Test. – Dynamic tests will be performed with reference vehicles in both directions, if applicable.

N.7.4.6. Reference vehicles must stay within the defined roadway along the load receiving element. The tests shall be conducted with 6 runs with the vehicle centered along the width of the load receiving element; 2 runs with the vehicle on the right side along the width of the load receiving element; and 2 runs with the vehicle on the left side along the width of the load receiving element.

N.7.4.7 At the conclusion of the dynamic tests there will be a minimum of 10 weight readings for each test vehicle. The tolerance for each weight reading shall be based on the Weigh-in-Motion Scale division and the acceptance tolerance values per Table 6. for Accuracy Class III.

(Added 20XX)

...

Table 7a. Typical Class or Type of Device for Weighing Applications	
Class	Weighing Application or Scale Type
I	Precision laboratory weighing
II	Laboratory weighing, precious metals and gem weighing, grain test scales
III	All commercial weighing not otherwise specified, grain test scales, retail precious metals and semi-precious gem weighing, grain-hopper scales, animal scales, postal scales, vehicle on-board weighing systems with a capacity less than or equal to 30 000 lb, and scales used to determine laundry charges
III L	Vehicle scales, <u>weigh-in-motion vehicle scales</u> , vehicle on-board weighing systems with a capacity greater than 30 000 lb, axle-load scales, livestock scales, railway track scales, crane scales, and hopper (other than grain hopper) scales
IIII	Wheel-load weighers and portable axle-load weighers used for highway weight enforcement
Note: A scale with a higher accuracy class than that specified as “typical” may be used.	

(Amended 1985, 1986, 1987, 1988, 1992, 1995, ~~and~~ 2012, and 20XX)

36
37 ...

1 **UR.2.5. Access to Weighing Elements.** – Adequate provision shall be made for ready access to the pit of a
2 vehicle, **weigh-in-motion vehicle**, livestock, animal, axle-load, or railway track scale for the purpose of
3 inspection and maintenance. Any of these scales without a pit shall be installed with adequate means for
4 inspection and maintenance of the weighing elements.
5 **(Amended 1985 and 20XX)**
6

7
8 **UR.2.6. Approaches.**
9

10 **UR.2.6.1. Vehicle Scales and Weigh-in-Motion Vehicle Scales.** – On the entrance and exit end(s) of
11 a vehicle scale **and weigh-in-motion vehicle scale**, there shall be a straight approach as follows:
12

- 13 (a) the width at least the width of the platform,
- 14
- 15 (b) the length at least one-half the length of the platform but not required to be more than 12 m
16 (40 ft), and
- 17
- 18 (c) not less than 3 m (10 ft) of any approach adjacent to the platform shall be in the same plane as
19 the platform. Any slope in the remaining portion of the approach shall ensure (1) ease of vehicle
20 access, (2) ease for testing purposes, and (3) drainage away from the scale.
21

22 In addition to (a), (b), and (c), scales installed in any one location for a period of six months or more
23 shall have not less than 3 m (10 ft) of any approach adjacent to the platform constructed of concrete or
24 similar durable material to ensure that this portion remains smooth and level and in the same plane as
25 the platform; however, grating of sufficient strength to withstand all loads equal to the concentrated load
26 capacity of the scale may be installed in this portion.

27 [Nonretroactive as of January 1, 1976]

28 **(Amended 1977, 1983, 1993, 2006, and 2010, and 20XX)**
29

30 ...

31
32 **UR.3.2. Maximum Load.** – A scale shall not be used to weigh a load of more than the nominal capacity of
33 the scale.
34

35 **UR.3.2.1. Maximum Loading for Vehicle Scales and Weigh-in-Motion Vehicle Scales.** – A vehicle
36 scale **and weigh-in-motion vehicle scale** shall not be used to weigh loads exceeding the maximum load
37 capacity of its span as specified in Table UR.3.2.1. Span Maximum Load.
38 **(Added 1996) (Amended 20XX)**
39

40 ...

41
42 **UR.3.3. Single-Draft Vehicle Weighing.** A vehicle or a coupled-vehicle combination shall be commercially
43 weighed on a vehicle scale **or a weigh-in-motion vehicle scale** only as a single draft. That is, the total weight
44 of such a vehicle or combination shall not be determined by adding together the results obtained by separately
45 and not simultaneously weighing each end of such vehicle or individual elements of such coupled
46 combination. However, the weight of:
47

- 48 (a) a coupled combination may be determined by uncoupling the various elements (tractor, semitrailer,
49 trailer), weighing each unit separately as a single draft, and adding together the results; or
- 50
- 51 (b) a vehicle or coupled-vehicle combination may be determined by adding together the weights
52 obtained while all individual elements are resting simultaneously on more than one scale platform.
53

54 **Note:** This paragraph does not apply to highway-law-enforcement scales and scales used for the collection
55 of statistical data.

56 **(Added 1992) (Amended 20XX)**

1 ...

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3

UR.3.7. Minimum Load on a Vehicle Scale or Weigh-in-Motion Vehicle Scale. – A vehicle scale **or weigh-in-motion vehicle scale** shall not be used to weigh net loads smaller than:

4

5

6

(a) 10 d when weighing scrap material for recycling or weighing refuse materials at landfills and transfer stations; and

7

8

9

(b) 50 d for all other weighing.

10

11

As used in this paragraph, scrap materials for recycling shall be limited to ferrous metals, paper (including cardboard), textiles, plastic, and glass.

12

13

(Amended 1988, 1992, ~~and 2006~~, **and 20XX**)

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UR.3.9. Use of Manual Weight Entries. – Manual gross or net weight entries are permitted for use in the following applications only when:

18

19

20

(e) a point-of-sale system interfaced with a scale is giving credit for a weighed item;

21

22

(f) an item is pre-weighed on a legal for trade scale and marked with the correct net weight;

23

24

(g) a device or system is generating labels for standard weight packages;

25

26

(h) postal scales or weight classifiers are generating manifests for packages to be picked up at a later time; or

27

28

29

(e) livestock, ~~and vehicle scales, and weigh-in-motion vehicle scales~~ generate weight tickets to correct erroneous tickets.

30

31

(Added 1992) (Amended 2000 ~~and 2004~~, **and 20XX**)

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33 ...

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Appendix D. Definitions

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36 ...

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vehicle scale. – A scale adapted to weighing highway, farm, or other large industrial vehicles (except railroad freight cars), loaded or unloaded. [2.20]

39

40

41 ...

42

43

weigh-in-motion vehicle scale. – A scale adapted to weighing highway, farm, or other large industrial vehicles (except railroad freight cars), loaded or unloaded, **in a single draft while these vehicles move continuously across the scale.** [2.20]

44

45

46

(Amended and 20XX)

47

48

1 **Background/Discussion:** See Appendix A, Page S&T-A95.
 2

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input checked="" type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item has merit and should be given an assigned status. During open hearings, Mr. Dick Suiter (Richard Suiter Consulting) commented that as a WIM member, recommend the item be assigned. He explained that this proposal is different than SCL-16.1 because it proposes using a single draft with a full-length truck scale. Mr. John McGuire (NJ) and Mr. Jim Willis (NY) agree with this position.</p>

3
 4 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 5 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

6 **ABW – AUTOMATIC BULK WEIGHING SYSTEMS**

7 **ABW-16.1 D A. Application, S Specifications, N. Notes, UR. User Requirements and**
 8 **Appendix D – Definitions: automatic bulk weighing system.**

9 **Source:**
 10 Kansas

11 **Purpose:**
 12 Modernize the ABWS Code to more fully reflect the types of systems in use and technology available while still
 13 maintaining the safeguards of the current code and amend the ABWS definition by removing requirements that are
 14 included in specifications and providing guidance as to what amount of automation is required for an Automatic Bulk
 15 Weighing System.

16 **Item Under Consideration:**
 17 Amend NIST Handbook 44 Automatic Bulk Weighing Systems Code as follows:

18 **A. Application**

19 **A.1.General.** – This code applies to ~~automatic bulk~~ weighing systems, ~~that is, weighing systems capable of~~
 20 ~~adapted to the automatic~~ **automatically** weighing ~~of a commodity in~~ successive drafts of **a commodity**
 21 **without operator intervention.** ~~predetermined amounts automatically recording the no load and loaded~~
 22 ~~weight values and accumulating the net weight of each draft.~~
 23 (Amended 1987 **and 20XX**)

1 **S. Specifications**

2 **S.1. Design of Indicating and Recording Elements and Recorded Representations.**

3 **S.1.1. Zero Indication.** – ~~Provisions~~ An automatic bulk weighing system shall ~~be made to~~ indicate
4 and record a no-load reference value and, if the no-load reference value is a zero value indication, to
5 indicate and record an out-of-balance condition on both sides of zero.
6 (Amended 20XX)

7 ...

8 **S.1.5. Recording Sequence.** – ~~Provision~~ An automatic bulk weighing system shall ~~be made so that~~
9 indicate all weight values ~~are indicated~~ until ~~the completion of the~~ recording of the indicated value is
10 completed.
11 (Amended 20XX)

12 **S.1.6. Provision for Sealing Adjustable Components on Electronic Devices.** – Provision shall be
13 made for applying a security seal in a manner that requires the security seal to be broken before an
14 adjustment can be made to any component affecting the performance of the device.

15 **S.1.7. No Load Reference Values** – An automatic bulk weighing system shall indicate and record
16 weight values with no load in the load-receiving element. No load reference values must be
17 recorded at a point in time when there is no product flow into or out of the load receiving element.
18 Systems may be designed to stop operating if a no load reference value falls outside of user
19 designated parameters. If this feature is designed into the system then the no load reference value
20 indicated when the system is stopped must be recorded, an alarm must activate, weighing must be
21 inhibited, and some type of operator intervention must be required to restart the system after it is
22 stopped.
23 (Added 20XX)

24 **S.1.8. Loaded Weight Values** – An automatic bulk weighing system shall indicate and record
25 loaded weight values for each weighment.
26 (Added 20XX)

27 **S.1.9. Net Weight Values** – An automatic bulk weighing system shall calculate and record net
28 weight for each weighment.
29 (Added 20XX)

30 **S.1.10. Net Weight Accumulation** – An automatic bulk weighing system shall accumulate and
31 record the sum of all net weight values for all weighments performed during a weighing process.
32 (Added 20XX)

33 **S.3. Interlocks and ~~Gate Control~~Product Flow Control.**

34 **S.3.1. ~~Gate Position~~Product Flow Control.** – ~~Provision~~ An automatic bulk weighing system shall
35 ~~be made to~~ clearly indicate to the operator product flow status ~~the position of the gates leading~~
36 ~~directly~~ to and from the ~~weigh hopper~~ load receiving element. Many types of equipment can be
37 used to control the flow of product into and out of a load receiving element automatically including
38 but not limited to gates, conveyors, augers, robots, pipes, tubes, elevators, buckets, etc.
39 (Amended 20XX)

40 **S.3.2. Interlocks.** – Each automatic bulk weighing system shall have operating interlocks to provide for
41 the following:

- 42 (a) Product cannot be cycled and weighed if the weight recording element is disconnected or

1 subjected to a power loss.

2 (b) ~~can only cannot print record~~ a weight if ~~either of the gates equipment controlling~~
 3 ~~product flow to or from the load-receiving element is in a condition which prevents~~
 4 ~~product entering or leaving the load receiving element, leading directly to or from the~~
 5 ~~weigh hopper is open.~~

6 (c) A “low paper” sensor, when provided, is activated.

7 (d) The system will operate only in the proper sequence in all modes of operation.

8 (e) When an overflow alarm is activated, the system shall indicate and record an overflow
 9 condition.

10 (Amended 1993 and 20XX)

11 **S.3.3. ~~Overflow Sensor~~ And Interference Detection.**

12 (a) ~~An automatic bulk weighing system must have a means to detect when The the weigh~~
 13 ~~hopper load-receiving element shall be equipped with an is overfilled. When an overflow~~
 14 ~~condition exists sensor which will cause the feed product flow to the load receiving element~~
 15 ~~must be stopped, gate to close an alarm must activate, activate an alarm, and inhibit~~
 16 weighing ~~must be inhibited~~ until the overflow condition has been corrected, ~~and some type of~~
 17 ~~operator intervention must be required to restart the system. An alarm could be many~~
 18 ~~things including a flashing light, siren, horn, flashing computer screen, etc. The intent of~~
 19 ~~an alarm is to make the operator aware there is a problem which needs corrected.~~

20 (Added 1993) (Amended 20XX)

21
 22 (b) ~~If the system is equipped with a Downstream storage devices and other equipment,~~
 23 ~~permanent or temporary, lower garner or surge bin, that garner shall also which have the~~
 24 ~~potential to interfere with weighing when overfilled or not functioning properly must~~
 25 ~~have a means to prevent interference. When interference exist the system must stop, an~~
 26 ~~alarm must activate, product flow must stop, weighing must be inhibited until the~~
 27 ~~interference has been corrected, and some type of operator intervention is required to~~
 28 ~~restart the system. be equipped with an overflow sensor which will cause the gate of the~~
 29 ~~weigh hopper to remain open, activate an alarm, and inhibit weighing until the overflow~~
 30 ~~condition has been corrected.~~

31 *[Nonretroactive as of January 1, 1998]*

32 (Amended 1997 and 20XX)

33 **N. Notes**

34 **N.1. Testing Procedures.**

35 **N.1.1. Test Weights.** – The increasing load test shall be conducted using test weights equal to at least
 36 10 % of the capacity of the system:

37 (a) on automatic-~~grain~~ bulk-weighing systems installed after January 1, 1984 used to weigh
 38 grain; and

39 (b) on other automatic bulk-weighing systems installed after January 1, 1986.

40 (Amended 1987, and 20XX)

41 **UR. User Requirements**

42 **UR.4. System Modification.** – Components of The the automatic bulk weighing system, shall not be

1 modified except when the modification has been approved by a competent engineering authority, preferably
2 that of the engineering department of the manufacturer of the scale, and the official with statutory authority
3 having jurisdiction over the scale.
4 (Amended 1991 ~~and 20XX~~)

5 And amend Handbook 44 Appendix D – Definitions as follows:

6 **automatic bulk weighing system.** – A weighing system capable of adapted to the automatic automatically
7 weighing ~~of bulk commodities in~~ successive drafts of a commodity without operator intervention.
8 ~~predetermined amounts, automatically recording the no load and loaded weight values and accumulating~~
9 ~~the net weight of each draft.~~ [2.22]

10 **Background/Discussion:** See Appendix A, Page S&T-A95.
11

NEWMA Report
Regional recommendation to NCWM on item status: <ul style="list-style-type: none"><input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda<input type="checkbox"/> Recommend as an Information Item on the NCWM agenda<input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i><input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i> <p>The Committee and the body agree with comments made in the Western Weights and Measures Association report that this item should be withdrawn as no changes or additional information has been provided since 2016. No comment was heard during open hearing.</p>

12
13 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
14 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **WIM – WEIGH-IN-MOTION SYSTEMS USED FOR VEHICLE ENFORCEMENT**
2 **SCREENING TENTATIVE CODE**

3 **WIM-19.11 D Title of Tentative Code, S.1.7.1. Values to be Recorded., S.4.1. Designation of**
4 **Accuracy., N.1. Test Procedures, T.2. Tolerance Values for Accuracy ~~Class A~~**
5 **Classes., UR.1.1. General, Table 1. Typical Class or Type of Device for Weighing**
6 **Applications.**

7 **Source:**
8 Intercomp Company

9 **Purpose:**
10 Provide for certification of non-legal for trade weigh-in-motion scales for vehicles.

11 **Item Under Consideration:**
12 Amend NIST Handbook 44 Weigh-in-Motion Systems used for Vehicle Enforcement Screening Code as follows:

13 **Section 2.25. Weigh-In-Motion Systems**

14 **Used for Vehicle Enforcement Weight Screening – Tentative Code**

15 ...

16 **S.1.7.1. Values to be Recorded.** – At a minimum, the following values shall be printed and/or stored
17 electronically for each vehicle weighment:

18 ...

19 (j) violations **if applicable**, as identified in paragraph S.2.1. Violation Parameters, which occurred during
20 the weighing of the vehicle; and

21 ...

22 **S.2.1. Violation Parameters (if applicable).** – The instrument shall be capable of accepting user-entered
23 violation parameters

24 ...

25 **S.4.1. Designation of Accuracy.** – Weigh-in-motion systems meeting the requirements **in table T.2.2** of this
26 code shall be designated **with appropriate accuracy class, as accuracy Class A.**

27 ...

28 **N.1. Test Procedures**

29 ...

30 **N.1.4. Test Speeds.** – All dynamic tests shall be conducted **up to the intended speed limit of the WIM system**
31 **or** within 20 % below or at the posted speed limit, **whichever is lower.**

32 **N.1.5. Test Procedures.**

33 **N.1.5.1. Dynamic Load Test.** – The dynamic test shall be conducted using the test vehicles defined in N.1.1.
34 Selection of Test Vehicles. The test shall consist of a minimum of 20 runs for each test vehicle at the speed
35 as stated in N.1.4. Test Speeds.

36 At the conclusion of the dynamic test there will be a minimum of 20 weight readings for each single axle,
37 axle group, and gross vehicle weight of the test vehicle. The tolerance for each weight reading shall be based
38 on the percentage values specified in Table T.2.2. ~~**Tolerances for Accuracy Class A.**~~

1 ...

2 **T.2. Tolerance Values for Accuracy ~~Classes~~ Class A.**

3 **T.2.2. Tolerance Values for Dynamic Load Test.** – The tolerance values applicable during dynamic load testing
 4 are as specified in Table T.2.2.

5 **Table T.2.2. Tolerances for**
 6 **Accuracy Class A**

Load Description*	Tolerance as a Percentage of Applied Test Load
Axle Load	± 20 %
Axle Group Load	± 15 %
Gross Vehicle Weight	± 10 %
* No more than 5 % of the weighments in each of the load description subgroups shown in this table shall exceed the applicable tolerance.	

7
 8
 9

Table T.2.2. Tolerances for
Accuracy Classes

Load Description*	Tolerance as a Percentage of Applied Test Load			
	<u>D</u>	<u>C</u>	<u>B</u>	<u>A</u>
<u>Axle Load</u>	<u>± 5 %</u>	<u>± 10 %</u>	<u>± 15 %</u>	<u>± 20 %</u>
<u>Axle Group Load</u>	<u>± 3 %</u>	<u>± 7 %</u>	<u>± 10 %</u>	<u>± 15 %</u>
<u>Gross Vehicle Weight</u>	<u>± 1 %</u>	<u>± 2 %</u>	<u>± 5 %</u>	<u>± 10 %</u>
<u>* No more than 5 % of the weighments in each of the load description subgroups shown in this table shall exceed the applicable tolerance</u>				

10 ...

11 **UR.1.1. General.** – The typical class or type of device for particular weighing applications is shown in Table 1.
 12 Typical Class or Type of Device for Weighing Applications.

Table 1. Typical Class or Type of Device for Weighing Applications	
Class	Weighing Application
A	Screening and sorting of vehicles based on axle, axle group, and gross vehicle weight.
<u>B</u>	<u>Industrial Screening, GVW axle, and axle group checkweighing</u>
<u>C</u>	<u>TBD</u>
<u>D</u>	<u>TBD</u>
Note: A WIM system with a higher accuracy class than that specified as “typical” may be used.	

13

1 **Background/Discussion:** See Appendix A, Page S&T-A99.
2

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be withdrawn. During open hearing, Mr. Dick Suiter (Richard Suiter Consulting) commented that opposition to this item is primarily due to the use of the term “non-commercial” and HB44 deals with commercial device applications.</p>

3
4 Additional letters, presentation and data may have been submitted for consideration with this item. Please refer to
5 <https://www.ncwm.net/meetings/annual/publication-16> to review these documents.

<p>6 BLOCK 1 ITEMS (B1) 7 8 9 10 11 12</p>	<p>TERMINOLOGY FOR TESTING STANDARDS (VERIFICATION STANDARDS, FIELD STANDARDS, TRANSFER STANDARDS, FIELD REFERENCE STANDARDS, ETC.,) TOLERANCES ON TESTS WHEN TRANSFER STANDARDS ARE USED, MINIMUM QUANTITY FOR FIELD REFERENCE STANDARD METER TESTS</p>
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13 *NOTE: During the 2019 NCWM S&T Committee Meeting, the S&T Committee considered the comments during the*
14 *opening hearing and recommended that B1, B2, LPG-3 and MFM-5 agenda items be combined with GEN-3 and gave*
15 *these items an assign status. This block of items (“New” BLOCK 1) now includes previously numbered items: GEN-*
16 *3; Block 1; Block 2; LPG-3; and MFM-5. The Item Under Consideration for all individual items has been included*
17 *in the listing that follows.*

18 **Source:**
19 NIST OWM, Endress + Hauser Flowtec AG USA (2018), and Seraphin Test Measure Company (2019)

- 20 **Purpose:**
21
- 22 (a) Add a definition for field standard that identifies the critical characteristics for field standards to comply with
23 the Fundamental Considerations of Handbook 44; and
 - 24 (b) To add a generalized definition for transfer standards in Handbook 44 to clearly include the transfer standards
25 already referenced in various codes; and
 - 26 (c) To specify that when a transfer standard is used, the basic tolerances specified in Handbook 44 be increased
27 by the amount of the estimated uncertainty associated with the transfer standard

- 1 (d) To remove the current limited definition and use of the term “Transfer Standard” and eliminate terms
2 “Testing Standards”, “Verification (Testing) Standards”, and instead use the term Field Standard, consistent
3 with its reference in Handbook 44, Appendix A, Fundamental Considerations and its use in several sections
4 of Handbook 44. To correct the broad use of the term Transfer Standard and instead replace its use with the
5 term Field Standard. To update all use of the term “standard” to use the term “Field Standard”. To remove
6 the current limited definition of Transfer Standard and instead use the term Field Standard.

7 **B1: GEN-19.1 A G-T.5. Tolerances on Tests When Transfer Standards are Used., Appendix**
8 **D – Definitions: standards, field., transfer standard. and standard, transfer.**

9 **Source:**
10 Seraphin Test Measure Company

11 **Purpose:**

- 12 (e) Add a definition for field standard that identifies the critical characteristics for field standards to comply with
13 the Fundamental Considerations of Handbook 44 (specifically, a standard that has long-term stability and
14 meets the one-third requirement for accuracy and uncertainty over the range of environmental and operational
15 variables in which commercial measuring devices are used); and
16 (f) To add a generalized definition for transfer standards in Handbook 44 to clearly include the transfer standards
17 already referenced in various codes; and
18 (g) To specify that when a transfer standard is used, the basic tolerances specified in Handbook 44 be increased
19 the amount of the estimated uncertainty associated with the transfer standard.

20 **Item Under Consideration:**

21 Amend NIST Handbook 44 General Code as follows:

22 **G-T.5. Tolerances on Tests When Transfer Standards Are Used. – To the basic tolerance values that would**
23 **otherwise be applied, there shall be added an amount equal to two times the standard deviation of the**
24 **applicable transfer standard when compared to a basic reference standard.**

25
26 **The codes 5.56.(a) Grain Moisture Meters, 5.56.(b) Grain Moisture Meters, and 5.57. Near-Infrared Grain**
27 **Analyzers are exempt from this requirement, because NIST Handbook 159 has requirements for monitoring**
28 **and retesting grain samples to ensure adequate stability and the tolerances for the devices under test already**
29 **incorporate the uncertainty associated with the use of grain samples as transfer standards. The code 2.21.**
30 **Belt-Conveyor Scale Systems is also exempt, because relative and absolute tolerances are included in the**
31 **code.**

32 And amend Handbook 44 Appendix D – Definitions as follows:

33 **Standard, Field. – A physical standard that (a) is stable (accurate and repeatable) over an extended period**
34 **of time (typically one year) and (b) meets the specifications and tolerances in NIST Handbook 105- series**
35 **standards (or other suitable and designated standards) over the range of environmental and operational**
36 **parameters in which the commercial measuring devices are used and is traceable to the reference or working**
37 **standards through comparisons, using acceptable laboratory procedures, and used in conjunction with**
38 **commercial weighing and measuring equipment. “Other suitable and designated standards” must show that**
39 **the field standards have been tested over the range of environmental and operational parameters in which**
40 **the commercial measuring devices under test are used and prove that the performance of the field standard**
41 **meets the requirements of the fundamental considerations.**

42 ~~**transfer standard. — A measurement system designed for use in proving and testing cryogenic liquid-**~~
43 ~~**measuring devices. [3.38]**~~

1 **Standard, Transfer.- A physical artifact, static or dynamic measurement device or a reference material that**
 2 **is stable (accurate and repeatable) for a short time period under the limited environmental and operational**
 3 **conditions during which the transfer standard is used. A transfer standard may be used as a temporary**
 4 **measurement reference to check the accuracy of a commercial measuring instrument, but the transfer**
 5 **standard does not satisfy the NIST Handbook 44 Fundamental Consideration that its correction and**
 6 **uncertainty are less than one-third of the smallest tolerance applied to the commercial measuring**
 7 **instrument under test, either over a long time period or a wide range of environmental or operating**
 8 **parameters. Transfer standards are called by different terms in different Handbook 44 codes and include**
 9 **terms such as master meter, fifth wheel, material, reference weight [railroad] cars, test vehicles and**
 10 **reference vehicle.**

11 **BLOCK 1 ITEMS (B1) A TERMINOLOGY FOR TESTING STANDARDS**
 12 **(original B1 items)**

13
 14 **Source:**
 15 NIST OWM

16 **Purpose:**
 17 To remove the current limited definition and use of the term “Transfer Standard” and eliminate terms “Testing
 18 Standards”, “Verification (Testing) Standards”, and instead use the term Field Standard, consistent with its reference
 19 in Handbook 44, Appendix A, Fundamental Considerations and its use in several sections of Handbook 44. To correct
 20 the broad use of the term Transfer Standard and instead replace its use with the term Field Standard. To update all
 21 use of the term “standard” to use the term “Field Standard”. To remove the current limited definition of Transfer
 22 Standard and instead use the term Field Standard.

23 **B1: SCL-18.1 A N.2. Verification (Testing) Standards**

24 **Item Under Consideration:**
 25 Amend NIST Handbook 44, Scales Code as follows:

26 N.2. ~~Verification (Testing)~~ **Field** Standards. – Field standard weights used in verifying weighing devices shall
 27 comply with requirements of NIST Handbook 105-Series standards (or other suitable and designated standards)
 28 or the tolerances expressed in Fundamental Considerations, paragraph 3.2. (i.e., one-third of the smallest tolerance
 29 applied).
 30 (Amended 1986 ~~and 20XX~~)

31 **B1: ABW-18.1 A N.2. Verification (Testing) Standards**

32 **Item Under Consideration:**
 33 Amend NIST Handbook 44, Automatic Bulk Weighing Systems Code as follows:

34 N.2. ~~Verification (Testing)~~ **Field** Standards. – ~~Field S~~ standard weights and masses used in verifying weighing
 35 devices shall comply with requirements of NIST Handbook 105-1 (Class F) or the tolerances expressed in
 36 Appendix A, Fundamental Considerations, paragraph 3.2. (i.e., one-third of the smallest tolerance applied).
 37 (Amended 20XX)

38 **B1: AWS-18.1 A N.1.3. Verification (Testing) Standards, N.3.1. Official Tests, UR.4. Testing**
 39 **Standards**

40 **Item Under Consideration:**
 41 Amend NIST Handbook 44, Automatic Weighing Systems Code as follows:

1 **N.1.3. Verification (Testing) Field Standards.** – Field standard weights shall comply with requirements of NIST
2 Handbook 105-1, “Specifications and Tolerances for Field Standard Weights (Class F)” or the tolerances
3 expressed in Fundamental Considerations, paragraph 3.2. (i.e., one-third of the smallest tolerance applied).

4 (Amended 20XX)

5 **N.3.1. Official Tests.** – Officials are encouraged to periodically witness the required “in house” verification of
6 accuracy. Officials may also conduct official tests using the on-site **testing field** standards or other appropriate
7 standards belonging to the jurisdiction with statutory authority over the device or system.

8 (Amended 20XX)

9 **UR.4. Testing Field Standards.** – The user of a commercial device shall make available to the official with
10 statutory authority over the device **testing field** standards that meet the tolerance expressed in Fundamental
11 Considerations, paragraph 3.2. Tolerances for Standards (i.e., one-third of the smallest tolerance applied). The
12 accuracy of the **testing field** standards shall be verified annually or on a frequency as required by the official with
13 statutory authority and shall be traceable to the appropriate SI standard.

14 (Amended 20XX)

15 **B1: CLM-18.1 A N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**

16 **Item Under Consideration:**

17 Amend NIST Handbook 44, Cryogenic Liquid-Measuring Devices Code as follows:

18 **N.3.2. Transfer Field Standard Test.** – When comparing a meter with a calibrated **transfer field** standard, the
19 test draft shall be equal to at least the amount delivered by the device in two minutes at its maximum discharge
20 rate, and shall in no case be less than 180 L (50 gal) or equivalent thereof. When testing uncompensated volumetric
21 meters in a continuous recycle mode, appropriate corrections shall be applied if product conditions are abnormally
22 affected by this test mode.

23 (Amended 1976 and 20XX)

24 ~~**T.3. On Tests Using Transfer Standards.**— To the basic tolerance values that would otherwise be applied,
25 there shall be added an amount equal to two times the standard deviation of the applicable transfer
26 standard when compared to a basic reference standard. (Added 1976)~~

27 **B1: CDL-18.1 A N.3.2. Transfer Standard Test, T.3. On Tests Using Transfer Standards**

28 **Item Under Consideration:**

29 Amend NIST Handbook 44, Carbon Dioxide Liquid-Measuring Devices Code as follows:

30 **N.3.2. Transfer Field Standard Test.** – When comparing a meter with a calibrated **transfer field** standard, the
31 test draft shall be equal to at least the amount delivered by the device in two minutes at its maximum discharge
32 rate.

33 (Amended 20XX)

34 ~~**T.3. On Tests Using Transfer Standards.**— To the basic tolerance values that would otherwise be applied,
35 there shall be added an amount equal to two times the standard deviation of the applicable transfer
36 standard when compared to a basic reference standard.~~

1 **B1: HGM-18.1 A N.4.1. Master Meter (Transfer) Standard Test, T.4. Tolerance Application**
 2 **on Test Using Transfer Standard Test Method**

3 **Item Under Consideration:**

4 Amend NIST Handbook 44, Hydrogen Gas-Measuring Devices Tentative Code as follows:

5 **N.4.1. Master Meter (~~Transfer~~) Field Standard Test.** – When comparing a measuring system with a calibrated
 6 **transfer field** standard, the minimum test shall be one test draft at the declared minimum measured quantity and
 7 one test draft at approximately ten times the minimum measured quantity or 1 kg, whichever is greater. More tests
 8 may be performed over the range of normal quantities dispensed.

9 **(Amended 20XX)**

10 ~~**T.4. Tolerance Application on Test Using Transfer Standard Test Method.** – To the basic tolerance values
 11 that would otherwise be applied, there shall be added an amount equal to two times the standard deviation
 12 of the applicable transfer standard when compared to a basic reference standard.~~

13 **B1: GMM-18.1 A 5.56(a): N.1.1. Air Oven Reference Method Transfer Standards, N.1.3.**
 14 **Meter to Like-Type Meter Method Transfer Standards and 5.56(b): N.1.1.**
 15 **Transfer Standards, T. Tolerances¹**

16 **Item Under Consideration:**

17 Amend NIST Handbook 44, Grain Moisture Meters Code as follows:

18 **5.56.(a) Grain Moisture Meters**

19 **N.1.1. Air Oven Reference Method ~~Transfer~~ Field Standards.** – Official grain samples shall be used as
 20 the official **transfer field** standards with moisture content and test weight per bushel values assigned by the
 21 reference methods. The reference methods for moisture shall be the oven drying methods as specified by the
 22 USDA GIPSA. The test weight per bushel value assigned to a test weight transfer standard shall be the
 23 average of 10 test weight per bushel determinations using the quart kettle test weight per bushel apparatus as
 24 specified by the USDA GIPSA. Tolerances shall be applied to the average of at least three measurements on
 25 each official grain sample. Official grain samples shall be clean and naturally moist, but not tempered (i.e.,
 26 water not added). (Amended 1992, 2001, ~~and~~ 2003, **and 20XX**)

27 **N.1.3. Meter to Like-Type Meter Method Transfer Standards.** – Properly standardized reference meters
 28 using National Type Evaluation Program approved calibrations shall be used as **transfer field** standards. A
 29 reference meter shall be of the same type as the meter under test. Tests shall be conducted side-by-side using,
 30 as a comparison medium, grain samples that are clean and naturally moist, but not tempered (i.e., water not
 31 added). (Added 2001) **(Amended 20XX)**

32 **5.56.(b) Grain Moisture Meters**

33 **N.1.1. ~~Transfer~~ Field Standards.** – Official grain samples shall be used as the official **transfer field**
 34 standards with moisture content values assigned by the reference methods. The reference methods shall be
 35 the oven drying methods as specified by the USDA GIPSA. Tolerances shall be applied to the average of at
 36 least three measurements on each official grain sample. Official grain samples shall be clean and naturally
 37 moist, but not tempered (i.e., water not added).

38 (Amended 1992 **and 20XX**)

39 **T. Tolerances¹**

40 ¹These tolerances do not apply to tests in which grain moisture meters are the **transfer field** standards.

41 **(Amended 20XX)**

1 **B1: LVS-18.1 A N.2. Testing Standards**

2 **Item Under Consideration:**

3 Amend NIST Handbook 44, Electronic Livestock, Meat and Poultry Evaluation Systems and/or Devices Code as
4 follows:

5 **N.2. Testing Field Standards.** – ASTM Standard F2343 requires device or system users to maintain accurate
6 **reference field** standards that meet the tolerance expressed in NIST Handbook 44 Fundamental Considerations,
7 paragraph 3.2. Tolerances for Standards (i.e., one-third of the smallest tolerance applied).
8 **(Amended 20XX)**

9 **B1: OTH-18.1 A Appendix A: Fundamental Considerations, 3.2. Tolerances for Standards,**
10 **3.3. Accuracy of Standards**

11 **Item Under Consideration:**

12 Amend NIST Handbook 44, Appendix A: Fundamental Considerations as follows:

13 **3.2. Tolerances for Field Standards.** – Except for work of relatively high precision, it is recommended that the
14 accuracy of standards used in testing commercial weighing and measuring equipment be established and
15 maintained so that the use of corrections is not necessary. When the standard is used without correction, its
16 combined error and uncertainty must be less than one-third of the applicable device tolerance.

17 Device testing is complicated to some degree when corrections to standards are applied. When using a correction
18 for a standard, the uncertainty associated with the corrected value must be less than one-third of the applicable
19 device tolerance. The reason for this requirement is to give the device being tested as nearly as practicable the
20 full benefit of its own tolerance.
21 **(Amended 20XX)**

22 **3.3. Accuracy of Field Standards.** – Prior to the official use of testing apparatus, its accuracy should invariably
23 be verified. Field standards should be calibrated as often as circumstances require. By their nature, metal
24 volumetric field standards are more susceptible to damage in handling than are standards of some other types. A
25 field standard should be calibrated whenever damage is known or suspected to have occurred or significant repairs
26 have been made. In addition, field standards, particularly volumetric standards, should be calibrated with
27 sufficient frequency to affirm their continued accuracy, so that the official may always be in an unassailable
28 position with respect to the accuracy of his testing apparatus. Secondary field standards, such as special fabric
29 testing tapes, should be verified much more frequently than such basic standards as steel tapes or volumetric
30 provers to demonstrate their constancy of value or performance.

31 Accurate and dependable results cannot be obtained with faulty or inadequate field standards. If either the service
32 person or official is poorly equipped, their results cannot be expected to check consistently. Disagreements can
33 be avoided and the servicing of commercial equipment can be expedited and improved if service persons and
34 officials give equal attention to the adequacy and maintenance of their testing apparatus.
35 **(Amended 20XX)**

1 **B1: OTH-18.2 A Appendix D – Definitions: fifth-wheel, official grain samples, ~~transfer~~**
 2 **standard and Standard, Field**

3 **Item Under Consideration:**

4 Amend NIST Handbook 44, Appendix A: Fundamental Considerations as follows:

5 **fifth wheel.** – A commercially-available distance-measuring device which, after calibration, is recommended for
 6 use as a field ~~transfer~~ standard for testing the accuracy of taximeters and odometers on rented vehicles. [5.53,
 7 5.54]

8 (Amended 20XX)

9 **official grain samples.** – Grain or seed used by the official as the official ~~transfer~~ **field** standard from the
 10 reference standard method to test the accuracy and precision of grain moisture meters. [5.56(a), 5.56(b)]

11 (Amended 20XX)

12 ~~**transfer standard.** – A measurement system designed for use in proving and testing cryogenic liquid-~~
 13 ~~**measuring devices.** [3.38]~~

14 **Standard, Field.** – A physical standard that meets specifications and tolerances in NIST Handbook 105-
 15 **series standards (or other suitable and designated standards) and is traceable to the reference or working**
 16 **standards through comparisons, using acceptable laboratory procedures, and used in conjunction with**
 17 **commercial weighing and measuring equipment.**

18 (Added 20XX)

19 **BLOCK 1 ITEMS (B1) A DEFINE “FIELD REFERENCE STANDARD”**
 20 (original block 2 items)

21 **Source:**

22 Endress + Hauser Flowtec AG USA

24 **B1: CLM-18.2 A N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**

25 **Item Under Consideration:**

26 Amend NIST Handbook 44, Cryogenic Liquid-Measuring Devices Code as follows:

27 **N.3.2. ~~Field Reference~~Transfer Standard Meter Test.** – When comparing a meter with a calibrated **field**
 28 ~~**reference**~~~~**transfer**~~ standard **meter**, the test draft shall be equal to at least the amount delivered by the device in
 29 two minutes at its maximum discharge rate, and shall in no case be less than 180 L (50 gal) or equivalent thereof.
 30 When testing uncompensated volumetric meters in a continuous recycle mode, appropriate corrections shall be
 31 applied if product conditions are abnormally affected by this test mode.

32 (Amended 1976 and 20XX)

33 **T.3. On Tests Using Field ReferenceTransfer Standards Meters.** – To the basic tolerance values that would
 34 otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable
 35 ~~**field reference**~~~~**transfer**~~-standard **meter** when compared to a basic reference standard. (Added 1976)

36 **B1: CDL-18.2 A N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**

37 **Item Under Consideration:**

38 Amend NIST Handbook 44, Carbon Dioxide Liquid-Measuring Devices Code as follows:

1 **N.3.2. ~~Field Reference~~ Transfer Standard Meter Test.** – When comparing a meter with a calibrated **field**
2 **~~reference~~transfer standard meter**, the test draft shall be equal to at least the amount delivered by the device in
3 two minutes at its maximum discharge rate.

4 **(Amended 20XX)**

5 **T.3. On Tests Using ~~Field Reference~~ Transfer Standards Meters.** – To the basic tolerance values that would
6 otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable
7 **~~field reference~~transfer standard** when compared to a basic **~~field reference~~reference standard meter**.

8 **B1: HGM-18.2 A N.4.1. Master Meter (Transfer) Standard Test and T.4. Tolerance**
9 **Application on Test Using Transfer Standard Test Method**

10 **Item Under Consideration:**

11 Amend NIST Handbook 44, Hydrogen Gas-Measuring Devices Tentative Code as follows:

12 **N.4.1. ~~Field Reference~~Master Meter (Transfer) Standard Meter Test.** – When comparing a measuring system
13 with a calibrated **~~field reference~~transfer standard meter**, the minimum test shall be one test draft at the declared
14 minimum measured quantity and one test draft at approximately ten times the minimum measured quantity or 1
15 kg, whichever is greater. More tests may be performed over the range of normal quantities dispensed.

16 **(Amended 20XX)**

17 **T.4. Tolerance Application on Test Using ~~Field Reference~~ Transfer Standard Meters Test Method.** – To the
18 basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the
19 standard deviation of the applicable **~~field reference~~transfer standard meter** when compared to a basic reference
20 standard.

21 **B1: OTH-18.3 A Appendix D – Definitions: ~~field reference standard meter and transfer~~**
22 **~~standard~~**

23 **Item Under Consideration:**

24 Amend NIST Handbook 44, Appendix D as follows:

25 **field reference standard meter – A measurement system designed for use in proving and testing measuring**
26 **devices and meters.**

27 **~~transfer standard – A measurement system designed for use in proving and testing cryogenic liquid-~~**
28 **~~measuring devices.~~**

29 **B1: LPG-15.1 A N.3. Test Drafts.**

30 **Source:**

31 Endress + Hauser Flowtec AG USA

32 **Item Under Consideration:**

33 Amend NIST Handbook 44 LPG and Anhydrous Ammonia Liquid-Measuring Devices as follows:

34 **N.3. Test Drafts.**

35 **N.3.1 Minimum Test -** Test drafts should be equal to at least the amount delivered by the device in 1 minute
36 at its normal discharge rate.

37 **(Amended 1982)**

1 **N.3.2. Field Reference Standard Meter Test. – The minimum quantity for any test draft shall be equal**
 2 **to or greater than the amount delivered in one minute at the flow rate being tested.**
 3 **(Added 20XX)**

4 **B1: MFM-18.1 A N.3. Test Drafts.**

5 **Source:**
 6 Endress + Hauser Flowtec AG USA (2015)

7 **Item Under Consideration:**
 8 Amend NIST Handbook 44 Mass Flow Meters Code as follows:

9 **N.3. Test Drafts. –**

10 **N.3.1 Minimum Test** - The minimum test shall be one test draft at the maximum flow rate of the installation
 11 and one test draft at the minimum flow rate. More tests may be performed at these or other flow rates. (See
 12 T.3. Repeatability.)
 13 (Amended 1982 **and 20XX**)

14 **N.3.2. Field Reference Standard Meter Test. – The minimum quantity for any test draft shall be equal**
 15 **to or greater than the amount delivered in one minute at the flow rate being tested.**
 16 **(Added 20XX)**

17 **Background/Discussion:** See Appendix A, Page S&T-A101.
 18

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input checked="" type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>	
Comments and justification for the regional recommendation to NCWM: (This will appear in NCWM reports)	
The Committee and body agree that this item should be assigned. During open hearings, Mr. John McGuire (NJ) asked if this had been assigned yet. Mr. Dick Suiter (Richard Suiter Consulting) indicated that it has been marked as assigned to a TG and the TG is gathering members in order to be working by January.	

19
 20 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 21 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **LMD – LIQUID MEASURING DEVICES**

2 **LMD-19.1 I UR.4.2. Security for Retail Motor-Fuel Devices.**

3 *Note: This replaces Item GEN-1: G-A1 Commercial and Law-Enforcement Equipment. and G-S.2. Facilitation of*
4 *Fraud.*

5 **Source:**

6 Arizona, Florida, Maine, Michigan and Cambridge, Massachusetts; Skimmer Task Group
7

8 **Purpose:**

9 To prevent access and tampering by unauthorized persons to any area of the device where electronic financial
10 transactions occur, credit card information is obtained, and or personal information is stored or transmitted.
11

12 **Item Under Consideration:**

13 Amend NIST Handbook 44 Liquid Measuring Device Code as follows:

14 **UR.4.2. Security for Retail Motor-Fuel Devices (RMFD). Any retail motor fuel device capable of**
15 **conducting customer initiated electronic financial transactions must be secured to substantially restrict**
16 **the ability of unauthorized persons to manipulate it to obtain payment information that could be used**
17 **to commit fraud. The following is a non-exhaustive list of ways that restriction of such manipulation**
18 **may be accomplished:**

19 **(a) A physical lock, locking device, or a physical securing device that will restrict access to the**
20 **electronic financial transaction compartment of the RMFD. A lock, locking device or securing**
21 **device shall not be manipulated with commonly available tools. A lock shall not allow the use**
22 **of a universal key. A universal key is a key that is readily available in the market or can be**
23 **easily purchased in a hardware or common retail store. A single non-universal key for all of**
24 **the like devices at a retail facility or for all of the like devices at a chain of retail facilities is**
25 **acceptable or;**

26 **(b) Electronic alarming or disabling of the equipment if unauthorized access is attempted or;**

27 **(c) Advanced payment acceptance technologies that increase protections against the theft of**
28 **payment information itself or do not allow access to such information in a form that may be**
29 **used to commit fraud or;**

30 **(d) Another security solution that has been approved by the local or state weights and measures**
31 **jurisdiction with authority.**

32 **(Added, 20XX)**

33
34 **Background/Discussion:** See Appendix A, Page S&T-A103.
35

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/>	Recommend as a Voting Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Information Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i>
<input type="checkbox"/>	Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i>
<input type="checkbox"/>	Recommend Withdrawal of the Item from the NCWM agenda

<p><i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM</p> <p><i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item should have a voting status. During open hearings, Mr. John McGuire (NJ) offered support of the item while, Mr. Jim Willis (NY) comments that NY feel this item does not belong in HB44 but supports actions to thwart fraud. Mr. Marc Paquette (VT) agrees with NY and has no objection moving this item forward for voting.</p>

1
 2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **LMD-20.1 Table S.2.2. Categories of Device and Methods of Sealing.**

5 **Source:**

6 Wayne Fueling Systems, LLC

7

8 **Purpose:**

9 Allow for an electronic log in lieu of a printed copy for a category 3 seal on an LMD.

10

11 **Item Under Consideration:**

12 Amend NIST Handbook 44 Liquid Measuring Device Code as follows:

<i>Table S.2.2.</i>	
<i>Categories of Device and Methods of Sealing</i>	
<i>Categories of Device</i>	<i>Methods of Sealing</i>
<p>Category 1: No remote configuration capability.</p>	<p>Seal by physical seal or two event counters: one for calibration parameters and one for configuration parameters.</p>
<p>Category 2: Remote configuration capability, but access is controlled by physical hardware.</p> <p>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</p>	<p>[The hardware enabling access for remote communication must be on-site. The hardware must be sealed using a physical seal or an event counter for calibration parameters and an event counter for configuration parameters. The event counters may be located either at the individual measuring device or at the system controller; however, an adequate number of counters must be provided to monitor the calibration and configuration parameters of the individual devices at a location. If the counters are located in the system controller rather than at the individual device, means must be provided to generate a hard copy of the information through an on-site device.]*</p> <p>[*Nonretroactive as of January 1, 1996]</p>
<p>Category 3: Remote configuration capability access may be unlimited or controlled through a software switch (e.g., password).</p> <p>[Nonretroactive as of January 1, 1995]</p> <p>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</p> <p>[Nonretroactive as of January 1, 2001]</p>	<p>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. A printed copy of the information must be available on demand through the device or through another on-site device. The information may also be available electronically. <u>The information must be available on demand through the device or through another on-site device either in printed or electronic format.</u> The event logger shall have a capacity to retain records equal to 10 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.)</p>

[Nonretroactive as of January 1, 1995]

(Table Added 1993) (Amended 1995, 1998, 1999, 2006, and 2015)

1 **Background/Discussion:** See Appendix A, Page S&T-A105.

2

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>	
Comments and justification for the regional recommendation to NCWM: (This will appear in NCWM reports)	
The Committee and the body agree to move this item to voting status. During open hearings, Mr. Jim Willis (NY) voiced strong support for this item, indicating the need to recognize newer capabilities of electronic audit trail technology.	

1
 2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

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

5 **Source:**
 6 7-Eleven, Inc.

8 **Purpose:**
 9 Allow additional time to automatic timeout on retail motor fuel dispensers, as conditions may warrant.

10
 11 **Item Under Consideration:**
 12 Amend NIST Handbook 44 Liquid Measuring Device Code as follows:

13 **S.1.6.10. Automatic Timeout – Pay-At-Pump Retail Motor-Fuel Devices.** – *Once a device has been*
 14 *authorized, it must de-authorize within ~~two minutes~~ **180 seconds (or five minutes where conditions warrant)** if*
 15 *not activated. Re-authorization of the device must be performed before any product can be dispensed. If the time*
 16 *limit to de-authorize the device is programmable, it shall not accept an entry greater than ~~two minutes~~ **180 seconds***
 17 ***(or five minutes where conditions warrant).***
 18 *[Nonretroactive as of January 1, 2017]*
 19 *(Added 2016)*

20
 21 **Background/Discussion:** See Appendix A, Page S&T-A105.
 22

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda	

<p><i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be moved to a voting status but with a change in language. The Committee believes 3-5 minutes is ambiguous and feels a specific timeout be used. The suggested language is as follows:</p> <p><i>S.1.6.10. Automatic Timeout – Pay-At-Pump Retail Motor-Fuel Devices. – Once a device has been authorized, it must de-authorize within two minutes 180 seconds three minutes (or five minutes where conditions warrant) 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 two minutes 180 seconds three minutes (or five minutes where conditions warrant).</i> <i>[Nonretroactive as of January 1, 2017]</i> (Added 2016)</p> <p>During open hearings, Mr. John McGuire (NJ) and Mr. Frank Greene (CT) stated that he was unsure of what circumstances would lead to a need for a 5-minute timeout. Mr. Jason Flint (NJ) advised the group that the submitter was concerned about ADA compliance and other issues.</p>

1
2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **LMD-20.3 UR.1.1. Discharge Hose.**

5 **Source:**

6 Connecticut

7

8 **Purpose:**

9 To prevent the inadvertent selection of a grade of motor fuel.

10

11 **Item Under Consideration:**

12 Amend NIST Handbook 44 Liquid Measuring Device Code as follows:

13 **UR.1.1. Discharge Hose.**

14 **UR.1.1.1. Length.** – The length of the discharge hose on a retail motor-fuel device:

15 (a) shall be measured from its housing or outlet of the discharge line to the inlet of the discharge nozzle;

16 (b) shall be measured with the hose fully extended if it is coiled or otherwise retained or connected
17 inside a housing; ~~and~~

18 (c) shall not exceed 5.5 m (18 ft) unless it can be demonstrated that a longer hose is essential to permit
19 deliveries to be made to receiving vehicles or vessels; ~~and~~

20 **(d) shall be so situated and located to prevent the inadvertent selection of a fuel grade.**

1 An unnecessarily remote location of a device shall not be accepted as justification for an abnormally long
 2 hose.

3 (Amended 1972 ~~and~~ 1987, and 20XX)

4
 5 **Background/Discussion:** See Appendix A, Page S&T-A106.
 6

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input checked="" type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>	
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i>	
This proposal was a late submission to NEWMA and was accepted by the Committee to be included in our agenda. The Committee and the body agree that this item has merit and be given a developing status. During open hearings, submitter Mr. Frank Greene (CT) stated that the basis of this item has roots in a consumer complaint that his office had investigated and asked if anyone had similar experiences. Mr. Ethan Bogren (Westchester County, NY) stated that he has investigated about a dozen complaints of this nature and indicated that there is a software upgrade available from the manufacturer that will solve the issue. Mr. John McGuire (NJ) stated that moving the position of the hose, where it is attached to the pump, may also be a viable solution. The Committee also encourages the submitter to contact the manufacturer.	

7
 8 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 9 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

10 **VTM – VEHICLE TANK METERS**

11 **VTM-18.1 S.3.1.1. Means for Clearing the Discharge Hose and UR.2.6. Clearing the**
 12 **Discharge Hose.**

13 **Source:**
 14 New York and NIST OWM (Carryover from 2018, VTM 1-B)

15 **Purpose:**
 16 Provide specifications and user requirements for manifold flush systems. Recognize that there is a balance between a
 17 mechanism that provides an important safety benefit but also, if used incorrectly, facilitates fraud. Ensure that VTM
 18 owners understand their responsibilities when installing such a system and ensure uniformity in enforcement
 19 throughout the country.

20 **Item Under Consideration:**
 21 Amend NIST Handbook 44 Vehicle-Tank Meters Code as follows:

1 S.3.1.1. Means for Clearing the Discharge Hose. - Metering systems may be equipped with systems
2 specifically designed to facilitate clearing of the discharge hose prior to delivery to avoid product
3 contamination. In such systems, a valve to temporarily divert product from the measuring chamber of
4 the meter to a storage tank, shall be installed only if all the following are met:

- 5 (a) the discharge hose remains of the wet-hose type;
- 6
- 7 (b) the valve and associated piping are approved by the weights and measures authority having
8 jurisdiction over the device prior to commercial use;
- 9
- 10 (c) the valve is permanently marked with its purpose (e.g. flush valve);
- 11
- 12 (d) the valve is installed in a conspicuous manner and as far from the hose reel as practical;
- 13
- 14 (e) the system clearly and automatically indicates the direction of product flow during operation
15 of the flush system; and
- 16
- 17 (f) clear means, such as an indicator light or audible alarm, is used to identify when the valve is
18 in use on both quantity indications and any associated recorded representations (e.g., using
19 such terms as “flushing mode” or “not for commercial use”);
20 [nonretroactive as of January 1, 2022 to become retroactive January 1, 2025]
- 21
- 22 (g) effective, automatic means shall be provided to prevent passage of liquid through any such
23 flush system during normal operation of the measuring system; and
24 [nonretroactive as of January 1, 2022 to become retroactive January 1, 2025]
- 25
- 26 (h) no hoses or piping are connected to the inlet when it is not in use.

27 (Added 2018)(Amended 2019)

28 **UR.2.6. Clearing the Discharge Hose**

29 **UR.2.6.1. Clearing the Discharge Hose, General. – A manifold flush or similar system designed to**
30 **assist in flushing product between deliveries is not to be used or operational during a commercial**
31 **transaction. The inlet valves for the system are not to be connected to any hose or piping (dust**
32 **covers are permitted) when not in use. When the flushing system is in operation, the discharge**
33 **hose is only to be connected to the port for the product type being flushed from the discharge line.**
34 **Following the flushing process, indications and recording elements must be reset to zero prior to**
35 **beginning a commercial delivery.**

36 (Added 20XX)

37 **UR.2.6.2.** Records. Whenever, prior to delivery, a different product is pumped through the discharge
38 hose to avoid contamination, a record including the date, time, original product, new product, and gallons
39 pumped shall be maintained. These records shall be kept for a period of 12 months and available for
40 inspection by the weights and measures authority.

41 (Added 2018)

42 **Background/Discussion:** See Appendix A, Page S&T-A106.

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/>	Recommend as a Voting Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Information Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Assigned Item on the NCWM agenda

<p>(To be developed by an NCWM Task Group or Subcommittee)</p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda (To be developed by source of the proposal)</p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda (In the case of new proposals, do not forward this item to NCWM)</p> <p><input type="checkbox"/> No recommendation from the region to NCWM (If this is a new proposal, it will not be forwarded to the national committee by this region)</p>
<p>Comments and justification for the regional recommendation to NCWM: (This will appear in NCWM reports)</p> <p>The Committee and the body agree that this item be moved to voting status, but with some changes to language. The Committee believes that the item in its current form will place undue burden on the industry as it already uses manifold flush systems and retrofitting them will be costly. The following language is proposed:</p> <p style="padding-left: 40px;">(a) clear means, such as an indicator light or audible alarm, is used to identify when the valve is in use <u>on both quantity indications and any associated recorded representations (e.g., using such terms as “flushing mode” or “not for commercial use”)</u>; <u>[nonretroactive as of January 1, 2022 2024 to become retroactive January 1, 2025]</u></p> <p style="padding-left: 40px;">(b) <u>effective, automatic means shall be provided to prevent passage of liquid through any such flush system during normal operation of the measuring system; and</u> <u>[nonretroactive as of January 1, 2022 2024 to become retroactive January 1, 2025]</u></p> <p>During open hearings, submitters Mr. Jim Willis (NY) and Mr. Steve Timar (NY) recommended removing retroactive dates and extend non-retroactive to 2024.</p>

1 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
2 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

3 **VTM-20.1 S.3.1. Diversion of Measured Liquid.**

4 **Source:**
5 Murray Equipment, Inc., Total Control Systems

6 **Purpose:**
7 Clarify the paragraph to protect vehicle motor fuel quality, retain safe operating procedures when handling vehicle
8 motor fuels, and to prevent fraud during delivery of vehicle motor fuels from vehicle tank meters.

9 **Item Under Consideration:**
10 Amend NIST Handbook 44 Vehicle-Tank Meters Code as follows:

11 **S.3.1. Diversion of Measured Liquid.** – No means shall be provided by which any measured liquid can be
12 diverted from the measuring chamber of the meter or the discharge line thereof. However, two or more delivery
13 outlets may be installed if means are provided to ensure that:

- 14 (a) liquid can flow from only one such outlet at one time; and
- 15 (b) the direction of flow for which the mechanism may be set at any time is definitely and conspicuously
16 indicated.

17 This paragraph does not apply to the following:

- 18 (1) Equipment used exclusively for fueling aircraft.

1 (2) Multiple-product, single-discharge hose metering systems ***that carry non-Vehicle Motor Fuels (ie.***
 2 ***Heating oil)*** that are equipped with systems designed to flush the discharge hose, provided the flushing
 3 system complies with the provisions of paragraph S.3.1.1. Means for Clearing the Discharge Hose.
 4 (Amended 2018)

5 **S.3.1.1. Means for Clearing the Discharge Hose.** – Metering systems ***that carry non-Vehicle Motor Fuels***
 6 ***(ie. Heating oil)*** may be equipped with systems specifically designed to facilitate clearing of the discharge
 7 hose prior to delivery to avoid product contamination. In such systems, a valve to temporarily divert product
 8 from the measuring chamber of the meter to a storage tank shall be installed only if all the following are met:

- 9 (a) the discharge hose remains of the wet hose type;
- 10 (b) the valve and associated piping are approved by the weights and measures authority having
 11 jurisdiction over the system prior to commercial use;
- 12 (c) the valve is permanently marked with its purpose (e.g., flush valve);
- 13 (d) the valve is installed in a conspicuous manner and as far from the hose reel as practical;
- 14 (e) the system clearly and automatically indicates the direction of product flow during operation of the
 15 flush system;
- 16 (f) clear means, such as an indicator light or audible alarm, is used to identify when the valve is in use;
 17 and
- 18 (g) no hoses or piping are connected to the inlet when it is not in use. (Added 2018)

19 **Background/Discussion:** See Appendix A, Page S&T-A109.
 20

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input checked="" type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be withdrawn due to its possible redundancy with VTM-18.1. During open hearings, Mr. John McGuire (NJ) stated he believes VTM-18.1 and VTM-20.1 are almost the same and suggested that the submitter speak with the submitter of VTM-18.1. Mr. Steve Timar (NY) commented that NY has issues with having a carve out just for home heating fuel.</p>

21
 22 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 23 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **LPG – LPG AND ANHYDROUS AMMONIA LIQUID-MEASURING DEVICES**

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

3 **Source:**

4 NIST OWM

6 **Purpose:**

7 Reformat the requirements for zero-set-back interlock and time-out features for clarity and consistency in the LPG
8 code to align the format with other measuring devices codes

9 **Item Under Consideration:**

10 Amend NIST Handbook 44 Liquid Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices Code as
11 follows:

12 **S.2.5. Zero-Set-Back Interlock.**

13
14 **S.2.5.1. Zero-Set-Back Interlock, Stationary (Other than Stationary Retail Motor-Fuel**
15 **Dispensers) and Vehicle-Mounted Meters, Electronic.** - A device shall be so constructed so
16 that after an individual delivery or multiple deliveries at one location have been completed, an
17 automatic interlock system shall engage to prevent a subsequent delivery until the indicating
18 element and, if equipped, recording element have been returned to their zero position. ~~For~~
19 ~~individual deliveries, if there is no product flow for two minutes the transaction must be~~
20 ~~completed before additional product flow is allowed. The 2-minute timeout shall be a sealable~~
21 ~~feature on an indicator.~~

22 [Nonretroactive as of 2021]

23 (Added 2019)(**Renumbered and Amended 2020**)

24
25 **S.2.6.5.2. Zero-Set-Back Interlock for Stationary Retail Motor-Fuel Devices.** – A device shall
26 be constructed so that:

- 27
28 (a) after a delivery cycle has been completed by moving the starting lever to any position
29 that shuts off the device, an automatic interlock prevents a subsequent delivery until
30 the indicating elements and recording elements, if the device is equipped and
31 activated to record, have been returned to their zero positions;
32
33 (b) the discharge nozzle cannot be returned to its designed hanging position (that is, any
34 position where the tip of the nozzle is placed in its designed receptacle and the lock
35 can be inserted) until the starting lever is in its designed shut-off position and the
36 zero-set-back interlock has been engaged; and
37
38 (c) in a system with more than one dispenser supplied by a single pump, an effective
39 automatic control valve in each dispenser prevents product from being delivered
40 until the indicating elements on that dispenser are in a correct zero position.

41 [Nonretroactive as of January 1, 2017]

42 (Added 2016) (**Renumbered 2020**)

44 **S.2.6. Automatic Timeout.**

45
46 **S.2.6.1. Stationary (Other than Stationary Retail Motor-Fuel Dispensers) and Vehicle-Mounted**
47 **Meters, Electronic.** For individual deliveries, if there is no product flow for three minutes the
48 transaction must be completed before additional product flow is allowed. The 3-minute timeout
49 shall be a sealable feature on an indicator.

50 [Nonretroactive as of 2021]

51 (Added 2020)

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S.2.6.2. Automatic Timeout Pay-at-Pump Retail Motor-Fuel Devices. – Once a device has been authorized, it must de-authorize within two 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 two minutes.

[Nonretroactive as of 2021]

(Added 2020)

Background/Discussion: See Appendix A, Page S&T-A110.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item should be listed as voting but with a language change. The Committee believes that to be consistent with other timeout requirements, the term “two minutes” shall be changed to “180 seconds) on lines 46 and 48 on page S&T 50. During open hearings, Mr. Dick Suiter (Richard Suiter Consulting) commented that he would recommend a language change to 3 minutes. Mr. John McGuire (NJ) and Mr. Jim Willis (NY) agreed with Mr. Suiter’s comments.</p>

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Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

WTR – WATER METERS

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

Source:

California Department of Food and Agriculture, Division of Measurement Standards

Purpose:

Add marking requirements for meter size and water flow direction indication marking requirements.

Item Under Consideration:

Amend NIST Handbook 44 Water Meters Code as follows:

S.3.2. Meter Size and Directional Flow Marking Information. A water meter shall be clearly and indelibly marked with the following information:

(a) meter size on the indicator face plate; and

(b) water flow direction designated by an arrow cast or stamped into the body of the meter.

Background/Discussion: See Appendix A, Page S&T-A111.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p> <input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item should be moved to voting status. No comments were heard regarding negative aspects to the proposal.</p>

Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

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

Source:
County of San Diego Department of Agriculture

Purpose:
Clarify S.1.1.4. Advancement of Indicating and Recording Elements shall also be applicable to non-mechanical water meters.

Item Under Consideration:
Amend NIST Handbook 44 Water Meters Code as follows:

S.1.1.4. Advancement of Indicating and Recording Elements. – Primary indicating and recording elements shall be susceptible to advancement only by the ~~mechanical~~ **normal** operation of the device.

Background/Discussion: See Appendix A, Page S&T-A111.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p> <input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda </p>

<p><i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be moved to a voting status, but with a language change. The Committee is concerned with the use of the term “normal”. The language change suggested is “as intended by the manufacturer”. During open hearings, Mr. Frank Greene (CT) suggested replacing “normal” with another term as it is ambiguous. Mr. Jason Flint (NJ) presented the language change offered by the Western Weights and Measures Association report.</p>

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2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **MFM – MASS FLOW METERS**

5 **MFM-20.1 S.1.3.3. Maximum Value of Quantity Divisions.**

6 **Source:**
7 NIST OWM

8 **Purpose:**
9 Reformat to more clearly specify the maximum permissible quantity value for “d” for liquids, Compressed Natural
10 Gas (CNG) and Liquefied Natural Gas (LNG) applications.

11 **Item Under Consideration:**
12 Amend NIST Handbook 44 Mass Flow Meters Code follows:

13 **S.1.3.3. Maximum Value of Quantity-Value Divisions.**

14 The maximum value of the quantity-value division shall not exceed the following.

- 15 (a) For compressed natural gas dispensed as an engine fuel:
16 (1) 0.001 for gasoline gallon equivalent (GGE) units; or
17 (2) 0.001 diesel gallon equivalent (DGE) units; or
18 (3) 0.001 kg or 0.001 lb for mass units.

19 **(b) For all gases other than compressed natural gas dispensed as an engine fuel a maximum value not**
20 **greater than 0.2 % of the minimum measured quantity.**
21 **(Added 2020)**

- 22 **(bc)** For liquefied natural gas dispensed as an engine fuel:
23 (1) 0.001 for diesel gallon equivalent (DGE) units; or
24 (2) 0.001 kg or 0.001 lb for mass units.
25 (Added 2019)

26 **(ed)** For all liquids other than liquefied natural gas dispensed as an engine fuel a maximum value not greater
27 than 0.2 % of the minimum measured quantity.

1 (Amended 1994, ~~and 2019, and 2020~~)

2 **Background/Discussion:** See Appendix A, Page S&T-A111.
 3

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be moved to voting status as there is no negative aspects to the proposal. During open hearings, Mr. James Cassidy (MA), Mr. Steve Timar (NY) and Mr. Jim Willis (NY), NY voiced support.</p>

4
 5 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 6 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

7 **EVF – ELECTRIC VEHICLE FUELING SYSTEMS**

8 **EVF-19.1 D S.3.5. Temperature Range for System Components. and S.5.2. EVSE**
 9 **Identification and Marking Requirements.**

10 **Source:**
 11 NIST OWM

12 **Purpose:**
 13 Ensure there are no inconsistencies in the tentative code between the temperature range requirement of – 40 °C to +
 14 85 °C (– 40 °F to 185 °F) specified for the EVSE’s operation and the requirement in paragraph S.5.2. EVSE
 15 Identification and Marking Requirements that specifies an EVSE must be marked with its temperature limits when
 16 they are narrower than and within – 20 °C to + 50 °C (– 4 °F to 122 °F).

17 **Item Under Consideration:**
 18 Amend NIST Handbook 44, Electric Vehicle Fueling Systems (EVFS) – Tentative Code as follows:

19 ~~**S.3.5. Temperature Range for System Components.** EVSEs shall be accurate and correct over the~~
 20 ~~temperature range of – 40 °C to + 85 °C (– 40 °F to 185 °F). If the system or any measuring system components~~
 21 ~~are not capable of meeting these requirements, the temperature range over which the system is capable shall be~~
 22 ~~stated on the NTEP CC, marked on the EVSE, and installations shall be limited to the narrower temperature~~
 23 ~~limits.~~

24 **S.5.2. EVSE Identification and Marking Requirements.** – In addition to all the marking requirements
 25 of Section 1.10. General Code, paragraph G-S.1. Identification, each EVSE shall have the following information
 26 conspicuously, legibly, and indelibly marked:

- 1 (a) voltage rating;
- 2 (b) maximum current deliverable;
- 3 (c) type of current (AC or DC or, if capable of both, both shall be listed);
- 4 (d) minimum measured quantity (MMQ); and
- 5 (e) temperature limits, if narrower than and within ~~-20 °C to +50 °C (-4 °F to 122 °F)~~ -40 °C to +
- 6 85 °C (-40 °F to 185 °F).

7
8 **Background/Discussion:** See Appendix A, Page S&T-A112.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be moved to voting status. During open hearings, Mr. Jim Willis (NY) commented that the markings on EVSE are currently widely varied and supports the changes. Mr. James Cassidy (MA) and Mr. John McGuire (NJ) voiced support.</p>

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11 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
12 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

13 **EVF-20.1 S.1.3.2. EVSE Value of the Smallest Unit.**

14 **Source:**
15 NIST OWM

16 **Purpose:**
17 Specify the maximum permissible value of the indicated and/or recorded electrical energy unit by an EVSE. Establish
18 a value for the energy unit of measurement (kilowatt-hour) that is: suitable for all commercial transactions and does
19 not significantly lengthen the time (by a factor of 25) to conduct a test of an EVSE.

20 **Item Under Consideration:**
21 Amend NIST Handbook 44, Electric Vehicle Fueling Systems follows:

22 **S.1.3. EVSE Units.**

23 **S.1.3.2. EVSE Value of Smallest Unit.** – The value of the smallest unit of
24 indicated delivery by an EVSE, and recorded delivery if the EVSE is equipped to
25 record, shall not be ~~greater than 0.005 MJ or 0.001~~ greater than 0.0005 MJ or 0.0001 kWh.
26 **(Amended 2020)**

1 **Background/Discussion:** See Appendix A, Page S&T-A114.
 2

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input checked="" type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i> </p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item be moved to a developing status as it has merit. During open hearings, Mr. Steve Timar (NY) questioned if MMQ should also be changed. Mr. Jim Willis (NY) stated that moving the resolution to 1/10,000th may be a little extreme and recommends changing the resolution to 1/1000th. He also questions whether changing the resolution effects the time to conduct a test.</p>

3
 4 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 5 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

6 **TXI – TAXIMETERS**

7 **See Block 3 Items: Tolerances for Distance Testing.**

8 **TIM – TIMING DEVICES CODE**

9 **TIM-20.1 S.1.1.3. Value of Smallest Unit.**

10 **Source:**
 11 NIST OWM

12 **Purpose:**
 13 Establish a suitable limit for the maximum value of the quantity division for indicated and recorded time-based or
 14 related services delivered through electric vehicle fueling systems.

15 **Item Under Consideration:**
 16 Amend NIST Handbook 44, Electric Vehicle Fueling Systems follows:

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:

(a) **For parking meters:**

(1) one-half hour on parking meters indicating time in excess of two hours, or

(2)(b) —six minutes on parking meters indicating time in excess of one but not greater than two hours; or

(b) **For an EVSE equipped with integral time-based feature:**

(1) one minute on an EVSE indicating time not greater than or equal to 60 minutes, or

(2) hours and minutes on an EVSE indicating time intervals in excess of 60 minutes;

(c) **For all other devices** five minutes ~~on all other devices~~, except those equipped with an in-service light.

(Amended 1975 and 2020)

Background/Discussion: See Appendix A, Page S&T-A115.

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input checked="" type="checkbox"/>	Recommend as a Voting Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Information Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i>
<input type="checkbox"/>	Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i>
<input type="checkbox"/>	Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i>
<input type="checkbox"/>	No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i>	
The Committee and the body agree that this item be moved to a voting status. Mr. James Cassidy (MA) and Mr. Jim Willis (NY) voiced support.	

Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **GMA – GRAIN MOISTURE METERS 5.56 (A)**

2 **GMA-19.1 D Table T.2.1. Acceptance and Maintenance Tolerances Air Oven Method for All**
 3 **Grains and Oil Seeds.**

4 **Source:**
 5 NTEP Grain Analyzer Sector

6 **Purpose:**
 7 Reduce the tolerances for the air oven reference method.

8 **Item Under Consideration:**
 9 Amend NIST Handbook 44 Grain Moisture Meter Code 5.56 (a) as follows:

10 **T.2.1. Air Oven Reference Method.** – Maintenance and acceptance tolerances shall be as shown in Table T.2.1.
 11 Acceptance and Maintenance Tolerances Air Oven Reference Method. Tolerances are expressed as a fraction of the percent
 12 moisture content of the official grain sample, together with a minimum tolerance.
 13 (Amended 2001)

Table T.2.1. Acceptance and Maintenance Tolerances Air Oven Reference Method		
Type of Grain, Class, or Seed	Tolerance	Minimum Tolerance
Corn, oats, rice, sorghum, sunflower	0.05 of the percent moisture content	0.8 % in moisture content
All other cereal grains and oil seeds	0.04 of the percent moisture content	0.7 % in moisture content

Table T.2.1. Acceptance and Maintenance Tolerances Air Oven Reference Method for All Grains and Oil Seeds	
Tolerance	Minimum Tolerance
<u>0.03 of the percent moisture content</u>	<u>0.5 % in moisture content</u>

(Amended 2001 and 20XX)

14 **Background/Discussion:** See Appendix A, Page S&T-A116.
 15

NEWMA Report	
Regional recommendation to NCWM on item status:	
<input type="checkbox"/>	Recommend as a Voting Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Information Item on the NCWM agenda
<input type="checkbox"/>	Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i>
<input checked="" type="checkbox"/>	Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i>

<input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i> The Committee and the body agree that this item should continue as a developing item. No comments were heard during open hearings.

1
 2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **MDM – MULTIPLE DIMENSION MEASURING DEVICES**

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

9 **Source:**
 10 Multiple Dimension Measuring Device Work Group

11 **Purpose:**
 12 Better define and document current practices related to the removal of a conveyance method (skid, pallet, etc) from
 13 the final measurement.

14 **Item Under Consideration:**
 15 Amend NIST Handbook 44 Multiple Dimension Measuring Devices Code as follows:

16 **S.1.3. Negative Values.** – ~~Except when in the tare mode,~~ Negative values shall not be indicated or recorded.
 17 **(Amended 20xx)**

18 **S.1.6. Customer Indications and Recorded Representations.**
 19 ...
 20

Table S.1.6. Required Information to be Provided by Multiple Dimension Measuring Systems			
	Column I¹	Column II¹	Column III

**Table S.1.6.
Required Information to be Provided by Multiple Dimension Measuring Systems**

Information	Provided by device	Provided by invoice or other means		Provided by invoice or other means as specified in contractual agreement
		Customer present	Customer not present	
1. Device identification ²	D or P	P	P	P or A
2. Error message (when applicable)	D or P	P	N/A	N/A
3. Hexahedron dimensions ³	D or P	P	P	P or A
4. Hexahedron volume (if used) ³	D or P	P	P	P or A
5. Actual weight (if used) ³	D or P	P	P	P or A
6. Tare Dimensional Offset (if used) ³	D or P	N/A	N/A	N/A
7. Hexahedron measurement statement ⁴	D or P or M	P	P	P or G

A = AVAILABLE UPON REQUEST BY CUSTOMER⁵
D = DISPLAYED
G = PUBLISHED GUIDELINES OR CONTRACTS
M = MARKED
N/A = NOT APPLICABLE
P = PRINTED or RECORDED IN A MEMORY DEVICE and AVAILABLE UPON REQUEST BY CUSTOMER⁵

Notes:

¹ As a minimum all devices or systems must be able to meet either column I or column II.

² This is only required in systems where more than one device or measuring element is being used.

³ Some devices or systems may not utilize all of these values; however, as a minimum either hexahedron dimensions or hexahedron volume must be displayed or printed.

⁴ This is an explanation that the dimensions and/or volume shown are those of the smallest hexahedron in which the object that was measured may be enclosed rather than those of the object itself.

⁵ The information “available upon request by customer” shall be retained by the party having issued the invoice for at least 30 calendar days after the date of invoicing.

(Amended 2004 and 20xx)

S.1.7. Minimum Measurement. – Except for entries of ~~tare~~**dimensional offset**, the minimum measurement by a device is 12 d. The manufacturer may specify a longer minimum measurement. For multi-interval devices, this applies only to the first measuring range (or segment) of each measurement axis (length, width, and height).

(Amended 2017 and 20XX)

S.1.8. Indications Below Minimum and Above Maximum. – When objects are smaller than the minimum dimensions identified in paragraph S.1.7. Minimum Measurement or larger than any of the maximum

1 dimensions plus 9 d, and/or maximum volume marked on the device plus 9 d, or when a combination of
 2 dimensions, including ~~tare~~**dimensional offset**, for the object being measured exceeds the measurement capability
 3 of the device, the indicating or recording element shall either:

- 4 (a) not indicate or record any usable values; or
 - 5 (b) identify the indicated or recorded representation with an error indication.
- 6 (Amended 2004, ~~and~~-2017 **and 20xx**)

7
 8 **S.2. Design of Zero and ~~Tare~~Dimensional Offset.**

9
 10 **S.2.1. Zero or Ready Adjustment.**

11
 12 **S.2.2. ~~Tare~~Dimensional Offset.** – The tare function shall operate only in a backward direction (that is,
 13 in a direction of underregistration) with respect to the zero reference or ready condition of the device. The
 14 value of the tare division or increment shall be equal to the division of its respective axis on the device.
 15 ~~There shall be a clear indication that tare has been taken.~~ **The dimensional offset shall eliminate the effect**
 16 **of the conveyance method resulting in the measurement of only the object intended to be measured.**

17 (**Amended 20xx**)

18
 19 **S.2.2.1. Maximum Value of ~~Tare~~Dimensional Offset for Multi-Interval** (Variable Division-
 20 Value Devices). – A multi- interval device shall not accept any ~~tare~~**dimensional offset** value greater
 21 than the maximum capacity of the lowest range of the **height** axis for which the tare is being entered.

22 (**Added 2016 and 20xx**)

23 ~~**S.2.2.2. Net Values, Mathematical Agreement.**— All net values resulting from a device~~
 24 ~~subtracting a tare entry from a gross value indication shall be indicated and recorded, if so equipped, to~~
 25 ~~the nearest division of the measuring range in which the net value occurs. In instances where the tare~~
 26 ~~value entered on a multi interval device is in a lower partial measuring range (or segment) than the~~
 27 ~~gross indication, the system shall either alter the tare entered or round the net result after subtraction of~~
 28 ~~the tare in order to achieve correct mathematical agreement.~~

29 Consider a multi interval device having two partial measuring ranges for the “x” axis:

- 30 ● Partial measuring range 1: 0 to 100 inches in 0.2 inch increments
- 31 ● Partial measuring range 2: 100 to 300 inches in 0.5 inch increments

32 The following examples clarify the two acceptable methods this device can use to achieve
 33 mathematical agreement when tare has been entered in a lower partial measuring range than the
 34 gross indication.

35 (**Added 2016**)

Acceptable Example 1: Altering of a Tare Entry to Achieve Accurate Net Indication			
Gross Indication of Item Being Measured	Tare Entered	Value of Tare after Being Altered by the Device	Acceptable Net Indication
154.5 in	41.2 in	41.0 in	113.5 in
154.5 in	41.4 in	41.5 in	113.0 in

36 (**Added 2016**)

Acceptable Example 2- Rounding of the Net Result (Following the Subtraction of Tare) to Achieve Accurate Net Indication			
Gross Indication of Item Being Measured	Tare Entered	Net Result Before Rounding (Gross Indication minus Tare Entered)	Acceptable Net Indication Rounded to Nearest 0.5 Inch
154.5 in	41.2 in	113.3 in	113.5 in
154.5 in	41.4 in	113.1 in	113.0 in

1 (Added 2016)

2 **Background/Discussion:** See Appendix A, Page S&T-A117.

3

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: (This will appear in NCWM reports)</p> <p>The Committee and the body agree that this item should be moved to voting status. During open hearings, Mr. Dick Suiter (Richard Suiter Consulting), a MDMD WG member, commented that MDMD code was borrowed from Scale code using “tare” as a term. The MDMD doesn’t use “tare” when determining measurements so the language change is a housekeeping item.</p>

4
5 Additional letters, presentation and data may have been submitted for consideration with this item. Please refer to
6 <https://www.ncwm.net/meetings/annual/publication-16> to review these documents.

7 **TNS – TRANSPORTATION NETWORK SYSTEMS**

8 **TNS-19.1 D A.4. Type Evaluation.**

9 **Source:**
10 NIST OWM

11 **Purpose:**
12 Facilitate the evaluation of devices/systems submitted to NTEP for type and to exclude those devices/systems not
13 complying with all requirements contained in that code from the NTEP evaluation process.

14 **Item Under Consideration:**
15 Amend NIST Handbook 44 Transportation Network Systems Code as follows:

1 **A.4. Type Evaluation. – The National Type-Evaluation Program (NTEP) will accept for type evaluation only**
2 **those devices that comply with all requirements of this code.**

3 **Background/Discussion:** See Appendix A, Page S&T-A118.
4

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i> The Committee and the body agree that this item be moved to voting status. During open hearings, Mr. Jim Willis (NY), Mr. John McGuire (NJ), Mr. James Cassidy (MA), Mr. Marc Paquette (VT) voiced support.</p>

5
6 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
7 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

8 **BLOCK 3 ITEMS (B3) TOLERANCES FOR DISTANCE TESTING IN TAXIMETERS**
9 **AND TRANSPORTATION NETWORK SYSTEMS**

10 **Source:**
11 New York Department of Agriculture and Markets

12 **Purpose:**
13 Provide the same distance-measurement tolerances for the Taximeters Code and Transportation Network Systems
14 Code.

15 **B3: TXI-20.1 T. Tolerances**

16 **Item Under Consideration:**
17 Amend NIST Handbook 44 Transportation Network Systems Code as follows:

18 **T. Tolerances**

19 **T.1. Tolerance Values.**

20 **T.1.1. On Distance Tests.** – Maintenance and acceptance tolerances for taximeters shall be as follows:

- 21 (a) On Overregistration: 1 % of the interval under test **when the distance is 1.6 km (1 mile) or less.**
- 22 **2.5 % of the interval under test when the distance is greater than 1.6 km (1 mile).**

1 **B3: TNS-20.1 T. Tolerances**

2 **Item Under Consideration:**

3 Amend NIST Handbook 44 Transportation Network Systems Code as follows:

4 **T. Tolerances**

5 **T.1.1. Distance Tests.** – Maintenance and acceptance tolerances shall be as follows:

6 (a) On Overregistration: ~~2.5%~~ 1 % of the interval under test when the distance is 1.6 km (1 mile) or
 7 less. 2.5 % of the interval under test when the distance is greater than 1.6 km (1 mile).

8 (b) On Underregistration: ~~2.5 %~~ 4 % of the interval under test.

9 **Background/Discussion:** See Appendix A, Page S&T-A119.

10

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <p><input checked="" type="checkbox"/> Recommend as a Voting Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Information Item on the NCWM agenda</p> <p><input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i></p> <p><input type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i></p> <p><input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i></p> <p><input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i></p>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item should be moved to voting status. During open hearings, Mr. Jim Willis (NY) indicated that taxi meters are currently being held to tighter standard as compared to TNS and this proposal will align the tolerances in both codes. Mr. John McGuire (NJ) and Mr. James Cassidy (MA), voiced support.</p>

11

12 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
 13 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

1 **OTH – OTHER ITEMS**

2 **OTH-16.1 D Electric Watthour Meters Code under Development**

3 **Source:**
4 NIST OWM

5 **Purpose:**

- 6 1) Make the weights and measures community aware of work being done within the U.S. National Work Group
7 on Electric Vehicle Fueling and Submetering to develop proposed requirements for electric watthour meters
8 used in submeter applications in residences and businesses;
- 9 2) Encourage participation in this work by interested regulatory officials, manufacturers, and users of electric
10 submeters.
- 11 3) Allow an opportunity for the USNWG to provide regular updates to the S&T Committee and the weights and
12 measures community on the progress of this work;
- 13 4) Allow the USWNG to vet specific proposals as input is needed.

14 **Item Under Consideration:**

15 Create a “Developing Item” for inclusion on the NCWM S&T Committee Agenda where progress of the USNWG
16 can be reported as it develops legal metrology requirements for electric watthour meters and continues work to develop
17 test procedures and test equipment standards. The following narrative is proposed for this item:

18 In 2012, NIST OWM formed the U.S. National Working Group on Electric Vehicle Fueling and Submetering to
19 develop proposed requirements for commercial electricity-measuring devices (including those used in sub-
20 metering electricity at residential and business locations and those used to measure and sell electricity dispensed
21 as a vehicle fuel) and to ensure that the prescribed methodologies and standards facilitate measurements that are
22 traceable to the International System of Units (SI).

23 In 2013, the NCWM adopted changes recommended by the USNWG to the NIST Handbook 130 requirements
24 for the Method of Sale of Commodities to specify the method of sale for electric vehicle refueling. At the 2015
25 NCWM Annual Meeting, the NCWM adopted NIST Handbook 44 Section 3.40 Electric Vehicle Refueling
26 Systems developed by the USNWG.

27 This Developing Item is included on the Committee’s agenda (and a corresponding item is proposed for inclusion
28 on the L&R Committee Agenda) to keep the weights and measures community apprised of USNWG current
29 projects, including the following:

- 30
- 31 • The USNWG continues to develop recommended test procedures for inclusion in a new EPO 30 for
32 Electric Vehicle Refueling Equipment along with proposed requirements for field test standards.
 - 33 • The USWNG is continuing work to develop a proposed code for electricity-measuring devices used in sub-
34 metering electricity at residential and business locations. This does not include metering systems under
35 the jurisdiction of public utilities. The USNWG hopes to have a draft code for consideration by the
36 community in the 2019-2020 NCWM cycle.

37 The USNWG will provide regular updates on the progress of this work and welcomes input from the community.
38 For additional information, contacts for the subgroups of the USNWG are:

39 **Electric Vehicle Refueling Subgroup:**

- 40 • Chairman, Tina Butcher at tbutcher@nist.gov or (301) 975-2196
- 41 • Technical Advisor, Juana Williams at juana.williams@nist.gov or (301) 975-3989

42 **Electric Watthour Meters Subgroup:**

- Chairman, Lisa Warfield at lisa.warfield@nist.gov or (301) 975-3308
- Technical Advisor, Tina Butcher at tbutcher@nist.gov or (301) 975-2196

Background/Discussion: See Appendix A, Page S&T-A119.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i> <input checked="" type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i> <input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i> <input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
<p>Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i></p> <p>The Committee and the body agree that this item should continue as a developing item. No comments were heard during open hearings.</p>

Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

OTH-18.4 Appendix D – Definitions: batch (batching)

Source:
Kansas

Purpose:
To clarify when batching is a metrologically significant event.

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

batch (batching) - The combining or mixing of two or more materials or ingredients using weighing and/or measuring devices or systems to produce a finished product whose quantity is determined from those weights and/or measurements.
(Added 20XX)

Background/Discussion: See Appendix A, Page S&T-A121.

NEWMA Report
<p>Regional recommendation to NCWM on item status:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Recommend as a Voting Item on the NCWM agenda <input type="checkbox"/> Recommend as an Information Item on the NCWM agenda <input type="checkbox"/> Recommend as an Assigned Item on the NCWM agenda <i>(To be developed by an NCWM Task Group or Subcommittee)</i>

<input checked="" type="checkbox"/> Recommend as a Developing Item on the NCWM agenda <i>(To be developed by source of the proposal)</i>
<input type="checkbox"/> Recommend Withdrawal of the Item from the NCWM agenda <i>(In the case of new proposals, do not forward this item to NCWM)</i>
<input type="checkbox"/> No recommendation from the region to NCWM <i>(If this is a new proposal, it will not be forwarded to the national committee by this region)</i>
Comments and justification for the regional recommendation to NCWM: <i>(This will appear in NCWM reports)</i>
The Committee and the body agree that this item should be moved to developing status as we do not deem item to be fully developed. During open hearings, Mr. John McGuire (NJ) raised the concern that this definition could possibly be used for blending at retail motor fuel devices.

1
2 Additional letters, presentations and data may have been part of the Committee’s consideration. Please refer to
3 <https://www.ncwm.net/meetings/interim/publication-15> to review these documents.

4 **OTH-20.1 Appendix D – Definitions: submeter**

5 **This item was not submitted to your region.**

Mr. Brad Bachelder, Maine | Committee Chair
Mr. Jim McEnerney, Connecticut | Member
Mr. Jim Willis, New York | Member
Mr. Kevin Mikoski, Irving Oil | AMC Representative

Specifications and Tolerances Committee

Appendix A
Background/Discussion on Agenda Items
of the
Specifications and Tolerances (S&T) Committee

Subject Series List

NIST Handbook 44 – General Code.....	GEN Series
Scales.....	SCL Series
Belt-Conveyor Scale Systems	BCS Series
Automatic Bulk Weighing Systems	ABW Series
Weights.....	WTS Series
Automatic Weighing Systems	AWS Series
Weigh-In-Motion Systems used for Vehicle Enforcement Screening.....	WIM Series
Liquid-Measuring Devices	LMD Series
Vehicle-Tank Meters	VTM Series
Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices	LPG Series
Hydrocarbon Gas Vapor-Measuring Devices.....	HGV Series
Cryogenic Liquid-Measuring Devices.....	CLM Series
Milk Meters	MLK Series
Water Meters	WTR Series
Mass Flow Meters	MFM Series
Carbon Dioxide Liquid-Measuring Devices.....	CDL Series
Hydrogen Gas-Metering Devices	HGM Series
Electric Vehicle Fueling Systems.....	EVF Series
Vehicle Tanks Used as Measures	VTU Series
Liquid Measures	LQM Series
Farm Milk Tanks	FMT Series
Measure-Containers.....	MRC Series
Graduates.....	GDT Series
Dry Measures	DRY Series
Berry Baskets and Boxes.....	BBB Series
Fabric-Measuring Devices.....	FAB Series
Wire-and Cordage-Measuring Devices	WAC Series
Linear Measures	LIN Series
Odometers	ODO Series
Taximeters.....	TXI Series
Timing Devices	TIM Series
Grain Moisture Meters (after January 1, 1998)	GMA Series
Grain Moisture Meters (before January 1, 1998)	GMB Series
Near-Infrared Grain Analyzers.....	NIR Series
Multiple Dimension Measuring Devices.....	MDM Series
Electronic Livestock, Meat, and Poultry Evaluation Systems and/or Devices	LVS Series
Transportation Network Measurement Systems.....	TNS Series
Other Items	OTH Series