

NIST OWM's Analysis of the 2018 S&T Agenda Items for the 2018 NCWM Annual Conference

OWM's comments are intended to offer technical information to the NCWM for its consideration in its deliberations before the Conference.

NEW ITEMS (unless otherwise indicated)

Grouped Items

BLOCK 1 ITEMS (B1) MANIFOLD FLUSH SYSTEMS

- **B1: GEN-1 G-S.2. Facilitation of Fraud. (*This item was withdrawn*)**
- **B1: VTM-1 S.3. Diversion of Measured Liquid and UR.2.6. Clearing the Discharge Hose. (Carry-Over Item)**

OWM – OWM continues to believe that additional work is needed to develop specifications, test notes, and user requirements to adequately address these systems. The current proposal is significantly different than the earlier version (i.e., the proposal on the Committee's agenda in 2016 and 2017) and yet, in OWM's opinion, needs substantial further development. In OWM's opinion, the submitter's previous approach to developing proposed requirements that would specifically address a manifold flush system was better as a starting point than the current proposal and suggests the submitter may want to revisit the original proposal as a foundation. OWM notes it is important to design requirements to ensure transparency and accuracy for a transaction, not to match systems already in use; this is particularly important for this item since there are concerns about how such systems may facilitate fraud if not properly designed, installed, and used.

OWM suggests the Committee and submitter review the detailed comments provided by OWM in 2016 and in OWM's 2018 Interim Meeting Analysis. After reviewing the current proposal, OWM offers the following technical points and recommendations for the Committee and submitter to consider.

- ***Proposed Changes to S.3.1. Provide Exemption from Diversion Requirements for All Multiple Compartment/Multiple Product/Single-Hose Systems.*** The changes proposed to paragraph S.3.1. in the current proposal exempts all metering systems with multiple compartments delivering multiple products through a single discharge hose from having to meet the provisions of the paragraph. Metering systems with multiple compartments delivering multiple products through a single discharge hose that are not equipped with a manifold flush system should not be provided such an exemption.
- ***Proposed Changes to G-S.2. Encourages Poor Design Choices and Will Be Burdensome for Enforcement Officials.*** OWM believes the decision to withdraw Gen-1 is technically sound. A manifold flush system, as described by the submitter of this item, needs to be designed in such a way that it does not facilitate the perpetration of fraud and yet, is still able to provide a safe means for operators to flush a system when changing to a different product to be dispensed. It is inappropriate to provide a mechanism for device owners to petition for a waiver of the enforcement of a HB 44 requirement simply because of someone's (or some company's) neglect to consider existing requirements during the design process or when making changes to provide a means to flush a system from ground level. Allowing for a petition as proposed in Gen-1 would

set the wrong precedent and likely lead to an undesirable trend as others will also want to be provided the same (much less expensive) option to having design their equipment properly that it complies with existing requirements.

- ***Proposed S.3.1.1. Requires Addition of Manifold Systems for All Multiple Compartment/Multiple Product/Single-Hose Systems.*** For proposed new paragraph S.3.1.1. Means for Clearing the Discharge Hose, requiring “means” to clear the discharge hose on any metering system delivering multiple products through a single meter may be construed by some as requiring the “manifold flush system” to be added to the metering system. It does not appear this was the submitter’s intent; thus, language should be modified to correct this. Likewise, if the intent was not to require all such systems to have these “manifold flush systems” installed on them, consideration should be given to rewording the proposed changes to paragraph S.3.1. Diversion of Measured Liquid such that any exemption from the paragraph for single hose/multiple product systems is only extended to those systems that meet the provisions of paragraph S.3.1.1. Means for Clearing the Discharge Hose.
- ***OWM Suggests Alternative Language:*** OWM revisited the specific recommendations we provided in our 2016 analysis of the earlier version of this current proposal and noted that some of OWM’s recommendations were not addressed (including those noted in the bullet points above). The Committee’s 2018 Interim Report does not indicate whether the Committee considered these points and no rationale provided for why these gaps are not addressed. Lacking any rationale for these gaps, it is possible that these may have been oversights. Thus, OWM continues to recommend the following alternate version of proposed changes to paragraph S.3.1. Diversion of Measured Liquid and to new paragraphs S.3.1.1. Means for Clearing the Discharge Hose and UR.2.6. Clearing the Discharge Hose. OWM would also like to better understand the rationale for installing the flush system as far from the hose reel as practical. OWM also suggests the Committee further discuss how the requirement for maintaining records might be implemented. NOTE: Editorial marks show changes to the submitters proposal; appropriate editorial marks for additions to HB 44 would need to be included in any final proposed language.

S.3.1. Diversion of Measured Liquid. – ~~Except on equipment used exclusively for fueling aircraft and for metering systems with multiple compartments delivering multiple products through a single discharge hose, n~~No means shall be provided by which any measured liquid can be diverted from the measuring chamber of the meter or the discharge line thereof. However, two or more delivery outlets may be installed if means is provided to ~~insure~~ **ensure that:**

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

This paragraph does not apply to the following:

- 1) **Equipment used exclusively for fueling aircraft.**
- 2) **Multiple product-single discharge hose metering systems that are equipped with systems designed to flush the discharge hose, provided the flushing system complies with the provisions of paragraph S.3.1.1.**

S.3.1.1. Means for Clearing the Discharge Hose. ~~For m~~**Metering systems with multiple compartments delivering multiple products through a single discharge hose, means shall be provided may be equipped with systems specifically designed to facilitate clearing of the discharge hose prior to delivery to avoid product contamination. ~~A~~ In such systems, a valve to temporarily divert product from the measuring chamber of the meter to a storage tank, shall be installed only if:**

- (a) **The discharge hose remains of the wet hose type; and**

- (b) the valve and associated piping are approved by the weights and measures authority having jurisdiction over the device prior to commercial use; and
- (c) the valve is permanently marked with its purpose (e.g., flush valve); and
- (d) the valve is installed in a conspicuous manner and as far from the ~~hose-reel~~ hose reel as practical; and
- (e) the system clearly and automatically indicates the direction of product flow during operation of the flush system; and
- (f) clear means, such as an indicator light or audible alarm, is used to identify when the valve is in use, on both quantity indications and any associated recorded representations (e.g., “flushing mode” or “not for commercial use”);
- (g) effective automatic means shall be provided to prevent passage of liquid through any such flush system during normal operation of the measuring system and to inhibit meter indications (or advancement of indications) and recorded representations while the flush system is in operation; and
- (h) no hoses or piping are connected to the inlet when it is not in use.
- ~~(i) the flush system is not to be operational during a commercial transaction.~~

(Added 20XX)

UR.2.6. Clearing the Discharge Hose

UR.2.6.1. Clearing the Discharge Hose, General. - A manifold flush or similar system designed to assist in flushing product between deliveries is not to be used or operational during a commercial transaction. The inlet valves for the system are not to be connected to any hose or piping (dust covers are permitted) when not in use. When the flushing system is in operation, the discharge hose is only to be connected to the port for the product type being flushed from the discharge line. Following the flushing process, indications and recording elements must be reset to zero prior to beginning a commercial delivery. A manifold flush system is not to be used on a metering system that is not equipped with the capability to accept separate calibration factors for different product types.

(Added 20XX)

UR.2.6.2. Records. Whenever, prior to delivery, a different product is pumped through the discharge hose to avoid contamination, a record including the date, time, original product, new product and gallons pumped shall be maintained. These records shall be kept and available for inspection by weights and measures for a period of 12 months (Added 20XX)

Prior to the 2018 Annual Meeting, OWM discussed these proposed changes with the submitter to determine a possible solution. The submitter agreed with OWM’s changes in concept, but expressed concerns over how some of the changes might affect devices already in operation. The submitter expressed an openness to considering including some of OWM’s proposed changes as nonretroactive requirements to allow manufacturers of these systems adequate time to respond to the proposed changes, but recognized the addition of such changes at this point in the cycle would affect the voting status of the item. The submitter feels it is important to make progress on this issue, given the large number of these systems being installed, and doesn’t want to see the item delayed by the addition of non-editorial changes. OWM concurs it is important for jurisdictions to ensure these systems are designed, installed, and used properly, and wants to see appropriate safeguards included.

OWM recognizes some of its proposed changes to the Item Under Consideration are largely editorial in nature and would clarify the intent of the proposed requirements; however, other OWM’s suggested changes are technically substantive and could not be made to the item without affecting its status as a voting item. OWM suggests the Committee consider one of the following two options:

(1) Should the Committee decide not to move the proposal forward for a vote at this Annual Meeting:

OWM suggests the Committee and the submitter continue to consider all OWM's proposed changes to the Item Under Consideration as the item continues to develop, with the understanding that some changes might be considered as nonretroactive requirements.

(2) Should the Committee decide the item is ready to move forward for a vote (particularly in recognition of the need to make progress on implementing some requirements):

OWM suggests the Committee split the item into two parts, VTM-1A with a "voting" status and VTM-1B with an "information" status as follows:

- VTM-1A
"Voting" item. Incorporate OWM's suggested changes into the Item Under Consideration with the exception of: S.3.1.1. (f); and S.3.1.1. (g); and proposed paragraph UR.2.6.1. Clearing the Discharge Hose, General and recommend the item for a vote.
- VTM-1B
"Information" item. Include OWM's suggested changes to S.3.1.1. (f); S.3.1.1. (g); and new UR.2.6.1. in an "Item Under Consideration" in this item which will carry over on the Committee's agenda. OWM and the submitter have agreed to collaborate on the inclusion of a nonretroactive date for those three items and will recommend this language, with an appropriate effective date, for a vote in the 2019 NCWM cycle. This would allow manufacturers time to implement what OWM views as critical requirements.

Regional Association Recommendations and Comments:

This group of items did not appear on the regional S&T Committee agendas of the WWMA or SWMA in the Fall of 2017.

NEWMA – Spring 2018 Annual Meeting: NEWMA heard multiple comments in favor of this item as written. NIST believes there is additional work to be done on this item. While the submitter and others believe there could be more polishing done on the item, it has been developed enough to be voted on.

CWMA – Spring 2018 Annual Meeting: The only comment heard was from NIST, who felt this item is in further need of development. The exemptions are currently too broad for S.3.1 Diversion of Measured Liquid and should only exempt those trucks with a manifold flush system. Also, in regards to UR.2.6. NIST questions how the records will be kept. The CWMA agrees and recommends this item move forward as a Developing item.

BLOCK 2 ITEMS (B2) DIVISION SIZE AND TOLERANCES FOR IN-MOTION RAILWAY SYSTEMS

- **B2: SCL-1 D Table 3, Parameters for Accuracy Classes (Carry-Over Item)**
- **B2: SCL-2 D T.N.3.6. Coupled-in-Motion Railroad Weighing Systems (Carry-Over Item)**

OWM – This item remains in a developing status having first been submitted by Meridian Engineers Pty Ltd. in 2017. OWM is not aware of any changes that have been made to the proposal from the time it was first introduced. OWM looks forward to an update by the submitter of this item on the progress of its development, and particularly how OWM's written comments and recommendations pertaining to this item that were circulated at the 2018 NCWM Interim Meeting are being addressed.

The following written OWM recommendations and comments for this item were provided to the Committee and NCWM membership at the NCWM's 2018 Interim Conference:

This item proposes four different accuracy classes for coupled-in-motion railroad weighing systems, which presents the need for someone to have to choose a weighing system that fits their intended application, yet, the proposal doesn't provide any guidance on how this selection is to be made nor does it specify who decides the appropriate accuracy class. This approach of specifying different accuracy classes in HB 44 for the same type of scale to be used in, perhaps, same or similar applications deviates significantly from how commercial and law-enforcement scales in the U.S. are typically selected today. Without any guidance concerning acceptable and unacceptable uses of the different accuracy classes specified, this proposal presents a conflict for those having to decide an appropriate weighing system for a given installation.

OWM would need additional supporting data from the submitter of this item to be able to offer constructive feedback on the two proposals in this group. The following is some initial information needed:

- Clarification on whether the proposal is intended to include “uncoupled-in-motion railroad weighing systems.” Although the title of proposed paragraph T.N.3.6. is “Coupled-In-Motion Railroad Weighing Systems,” proposed new paragraph T.N.3.6.3. Wagon Weighing references both uncoupled and coupled wagon weighing. If the proposal is to include uncoupled wagon weighing, the title of T.N.3.6. would need to be changed. If not, then the reference to “uncoupled wagon weighing” in T.N.3.6.3. would need to be deleted. We note that if the proposal is intended to apply to uncoupled-in-motion railroad systems, the tolerances specified in the proposal far exceed the current HB 44 tolerances specified in paragraph T.N.3.7. for this same application, which requires every weighment error to be within the static maintenance tolerance.
- Results of comparison tests (using reference cars weighed as a single draft on an accurate static railroad track scale) that provide true indication of the accuracy of the Meridian system.
- The reason for the changes proposed to footnote 3 of Table 3.
- Clarification of how the tolerance values in proposed Table T.N.3.6. are calculated for both wagon weighing and train weighing on both initial and subsequent verifications based on the criteria specified in proposed paragraph T.N.3.6.3. and T.N.3.6.4. Perhaps an example of the tolerance calculations for both wagon weighing and train weighing would be helpful to clarify the application of these tolerances. We note that example calculations of these paragraphs are provided in OIML R106 and although somewhat helpful, their application is still not clear.
- A list of the different qualifying applications in which the proposed four accuracy classes of a coupled-in-motion railroad weighing system could be used.

While OWM is very supportive of wanting to harmonize U.S. and international standards when it makes sense to do so, we view this proposal as an attempt to increase the allowable tolerance on individual railcars weighed coupled-in-motion to pave the way for the use of railroad weighing systems installed on continuous rail. We question the reasonableness of increasing current HB 44 tolerances to allow for the use of less accurate commercial equipment given that existing commercial equipment is able to perform to within the current tolerances specified.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA recommended withdrawal of this item because the changes are so substantial and the effect on other areas of the code and devices that are currently in use, that more research is needed to help the WWMA understand why the current code needs this change.

SWMA - Fall 2017 Annual Meeting: During the Committee's open hearings, Russ Vires, speaking on behalf of SMA, stated that SMA opposes both these items. Mr. Vires noted that the proposed changes seem rather simple, but would have considerable impact, including changes to the effective number of division and increasing the tolerance. Richard Suiter, speaking as a representative of the submitter (Meridian Engineers), gave a presentation on the proposal and noted that a key goal is to obtain harmonization with international requirements. Mr. Suiter noted that the effective error resulting from the proposed increase in tolerance is minimized by the large size of the overall load. The idea of establishing tolerances based on commodities would be a very different approach from our current system, but it may

be something that needs to be considered in the future. Others expressed concerns over that philosophy. Given the diverse opinions on this issue, the SWMA recommends this item remain Developing.

NEWMA – Spring 2018 Annual Meeting: The SMA recommends withdrawal of these items. Their rationale is that they do not want to lower standards or add classes with lower tolerances which may cause confusion. Another comment was heard that current accuracy classes could be too high. While NIST typically supports aligning standards, they generally concur with the SMA.

CWMA – Spring 2018 Annual Meeting: Comments heard were from Richard Suiter, who recommended the item remain Developmental. The submitter, Meridian, would also like this item to remain developing. The committee received written comments from the SMA, who recommended the withdrawal of this item. It is the opinion of the CWMA that this item move forward as a developing item.

SMA - Spring 2018 Meeting: The SMA recommends the withdrawal of these items. The current standards have been in effect for years, there are a number of devices that comply with the current standards, and the SMA does not feel lowering the standard is in the best interest of the weights and measures community. In addition, the SMA feels that adding additional classes with larger tolerances would cause confusion in the market place.

BLOCK 3 ITEMS (B3) SUMMING OF INDIVIDUAL WEIGHING/MEASURING ELEMENTS

- **B3: SCL-3 Table 3, Parameters for Accuracy Classes (Carry-Over Item)**
- **B3: OTH-1 Appendix A – Fundamental Considerations: Section 4.4 General Considerations (Carry-Over Item)**

These items have been withdrawn by the Committee

BLOCK 4 ITEMS (B4) TERMINOLOGY FOR TESTING STANDARDS

(Group of 10 items - All items in block are Carry-Over items)

- **B4: SCL-4 N.2. Verification (Testing) Standards**
- **B4: ABW-1 N.2. Verification (Testing) Standards**
- **B4: AWS-1 N.1.3. Verification (Testing) Standards, N.3.1. Official Tests, UR.4. Testing Standards**
- **B4: CLM-1 N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**
- **B4: CDL-1 N.3.2. Transfer Standard Test, T.3. On Tests Using Transfer Standards**
- **B4: HGM-1 N.4.1. Master Meter (Transfer) Standard Test, T.4. Tolerance Application on Test Using Transfer Standard Test Method**
- **B4: GMM-1 5.56(a): N.1.1. Air Oven Reference Method Transfer Standards, N.1.3. Meter to Like-Type Meter Method Transfer Standards and 5.56(b): N.1.1. Transfer Standards, T. Tolerances1**
- **B4: LVS-1 N.2. Testing Standards**
- **B4: OTH-2 Appendix A: Fundamental Considerations, 3.2. Tolerances for Standards, 3.3. Accuracy of Standards**
- **B4: OTH-3 Appendix D - Definitions: fifth-wheel, official grain samples, transfer standard and Standard, Field**

OWM – OWM believes the “developing” status assigned to the various items in this block is appropriate. Members of OWM’s Legal Metrology Devices Program are reviewing comments received and concerns raised on these items from the different regional W&M associations and industry. OWM foresees having to propose some additional changes to the items in an effort to address concerns and improve understanding. OWM hopes to complete this work

in the coming months and be able to present completed drafts for consideration during next year's NCWM conference cycle.

OWM recognizes its recommendations to terminology for field standards in Block 4 items will impact the Endress Hauser Flowtech proposed recommendations for definitions to reference standards in Block 5 and the terminology Endress Hauser Flowtech uses in S&T items LPG-4 and MFM-2. OWM encourages the review of its comments provided to these items as well and to review comments on the work that OWM will be doing to test master meters for use as "field standards," "transfer standards," or "reference standards," however named.

In addition, OWM recognizes the need to assess the appropriateness of the use of "master meters" as field standards and the need to control the variables associated with using a meter as a field standard. To help the community begin addressing this current gap, OWM is doing work to analyze the issues involved in establishing traceability of such systems to assist jurisdictions in investigating the possibility of using such systems. As part of this work, OWM is purchasing six Coriolis meters as follows to test refined fuels, LPG, and CNG:

- Two ½-inch Coriolis meters
- One 1-inch Coriolis meter
- Two 1½-inch Coriolis meters
- One 3-inch Coriolis meter, and
- One ½-inch meter specifically designed as a master meter to test CNG

OWM will work with states and industry to collect field data to determine if these standards will meet the Fundamental Considerations Section 3.2 in NIST HB 44.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item and all related items as developing items. Some standards were identified that may not be able to achieve the 1/3 standard in the Fundamental Considerations in Handbook 44. The WWMA would also like some clarification as to the intent of these changes, i.e. is it the intent to have a 105 series standard for all field standards and current transfer standards? Lastly, the WWMA would like the submitter to consider retaining and clarify the definition of "Transfer Standard" and perhaps expand the application of the definition to include other device codes.

SWMA - Fall 2017 Annual Meeting: The Committee took comments on the following ten items as a "batch:"

- New 6 - N.2. Verification (Testing) Standards (Scales)
- New 7 - N.2. Verification (Testing) Standards (ABWS)
- New 8 - N.1.3. Verification (Testing) Standards (AWS)
- New 9 - N.3.2. Verification (Testing) Standards (Cryogenic)
- New 10 - N.3.2. Verification (Testing) Standards (CO2)
- New 11 - N.4.1. Verification (Testing) Standards (H2)
- New 12 - N.1.1. Verification (Testing) Standards (Grain Moisture)
- New 13 - N.2. Verification (Testing) Standards (Electronic Livestock, Meat & Poultry Evaluation Systems)
- New 14 - Appendix A - Fundamental Considerations, Section 4.4.
- New 15 - Appendix D - Definitions Referencing Term "transfer standards"

The Committee heard comments from Bob Murnane, who recommended withdrawing these items and further developing them and resubmitting them. Mr. Murnane also provided written comments on these items, noting that in addition to the above items, two carryover items on the Committee's report on "transfer standards" and two new items related to this. The Committee heard from Tina Butcher (OWM) who noted that OWM's goal was to attempt to align the terminology that is used in various sections of the Handbook (including the Fundamental Considerations) relative to standards used in testing. These proposals came about as a result of OWM's analysis of the two carryover items referenced by Mr. Murnane. Mrs. Butcher acknowledged that additional work may be needed, given the comments that have been heard. The SWMA recommends that these items remain as Developing items.

NEWMA – Spring 2018 Annual Meeting: Comments were heard in support of the development of this item from the SMA, NIST and others. NEWMA recommends this be a developing item.

CWMA – Spring 2018 Annual Meeting: Richard Harshman (NIST) commented on this block of items saying these items are merely editorial and fully developed. The CWMA agrees and recommends they be made a Voting item in the next NCWM cycle.

SMA – Spring 2018 Meeting: The SMA looks forward to further information on these items. It is important to be consistent in our use of terms across multiple sections of Handbook 44.

Other – The Committee received written comments from Seraphin Test Measure Company on all items in Block 4 regarding transfer standards raising several concerns and recommending the items remain developmental until such time those concerns have been resolved. The comments have been posted to the NCWM’s website and are dated June 29, 2018.

BLOCK 5 ITEMS (B5) DEFINE “FIELD REFERENCE STANDARD”

(Group of 4 items)

- **B5: CLM-2 N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**
- **B5: CDL-2 N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards**
- **B5: HGM-2 N.4.1. Master Meter (Transfer) Standard Test and T.4. Tolerance Application on Test Using Transfer Standard Test Method**
- **B5: OTH-4 Appendix D – Definitions: field reference standard meter and transfer standard**

OWM: This item is closely related to items in Block 4 and LPG-4 and MFM-2. OWM believes additional work is needed on all those items; therefore, assigning the items in this block a developmental status is appropriate. See also OWM’s comments regarding terminology in those items.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: ***NIST Technical Advisor note:*** *These items were grouped differently on the 2017 WWMA’s S&T Committee agenda compared to how they are currently grouped in 2018 NCWM Publication 16. Thus, to view the WWMA’s recommendations and comments for each of the items listed in this group, refer to the 2017 WWMA’s S&T Committee’s Annual Meeting Report.*

SWMA - Fall 2017 Annual Meeting: ***NIST Technical Advisor note:*** *These items were grouped differently on the 2017 SWMA’s S&T Committee agenda compared to how they are currently grouped in 2018 NCWM Publication 16. Thus, to view the SWMA’s recommendations and comments for each of the items listed in this group, refer to the 2017 SWMA’s S&T Committee’s Annual Meeting Report.*

NEWMA – Spring 2018 Annual Meeting: Similar comments were heard for Block 5 as heard in Block 4. Moving forward, the developing language and terminology needs to be shared from Block 4. This item shows merit and NEWMA recommends it continue to be developed.

CWMA – Spring 2018 Annual Meeting: No comments were received on this group of items. CWMA recommends them as “Developing” on the NCWM agenda.

Other - Comments received from Seraphin Test Measure Company to all items in Block 4 and Block 5, and stand-alone items LPG-4 and MFM-2, dated 12/28/17 posted on NCWM’s web site recommending a developing status be assigned to all items and raising several questions of concern.

BLOCK 6 ITEMS (B6) ALIGN VAPOR ELIMINATION REQUIREMENTS AMONG CODES

- **B6: LPG-1 S.2.1. Vapor Elimination.**

- **B6: CLM-3 S.2.1. Vapor Elimination.**
- **B6: CDL-3 S.2.1. Vapor Elimination.**

OWM – OWM submitted these items at the request of the NCWM S&T Committee as a follow-up to five items that were adopted at the 2017 NCWM Annual Meeting on the same topic. These items, as well as the five items adopted in 2017, are intended to align the language across multiple measuring codes with respect to the requirements pertaining to vapor elimination. OWM considers these items fully developed. These proposals eliminate the reference to “rigid metal tubing” in favor of the less restrictive language, “appropriate non-collapsible material.”

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA is in agreement that these items have merit and should be carried forward as voting items.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments jointly on the following items in a “batch”:

- New 18 - S.2.1. Vapor Elimination (LPG & NH3)
- New 19 - S.2.1. Vapor Elimination (Cryogenics)
- New 20 - S.2.1. Vapor Elimination (CO2)

Mrs. Tina Butcher (OWM), the submitter of the item, explained that OWM submitted these items at the request of the NCWM S&T Committee as a follow-up from items that were adopted at the 2017 NCWM Annual Meeting on the same topic. She noted that these items, as were the other items adopted in July 2017, are intended to align the language across multiple measuring codes and eliminate the reference to “rigid metal tubing” in favor of the more general language of “appropriate non-collapsible material.” Hearing no other comments on these items, the Committee recommended and the SWMA agreed to recommend they be designated as “Voting” items.

NEWMA – Spring 2018 Annual Meeting: NEWMA heard comments in support of this item and of the alignment and housekeeping it performs. NEWMA recommends it goes forward to a vote.

CWMA – Spring 2018 Annual Meeting: This is simply clean up language to align these codes with changes which were adopted in 2017 to the LMD code and others. The CWMA believes this item is ready for voting.

BLOCK 7 ITEMS (B7) ADDRESS DEVICES AND SYSTEMS ADJUSTED USING A REMOVABLE DIGITAL STORAGE DEVICE

(Group of 19 items - All items in block are Carry-Over items)

- **B7: GEN-2 D G-S.8.2. Devices and Systems Adjusted Using Removable Digital Device Storage**
- **B7: SCL-5 D S.1.11. Provision for Sealing.**
- **B7: BCS-1 D S.5. Provision for Sealing.**
- **B7: ABW-2 D S.1.6. Provision for Sealing Adjustable Components on Electronic Devices.**
- **B7: AWS-2 D S.1.3. Provision for Sealing.**
- **B7: LMD-1 D S.2.2. Provision for Sealing.**
- **B7: VTM-2 D S.2.2. Provision for Sealing.**
- **B7: LPG-2 D S.2.2. Provision for Sealing.**
- **B7: HGV-1 D S.2.2. Provision for Sealing.**
- **B7: CLM-4 D S.2.5. Provision for Sealing.**
- **B7: MLK-1 D S.2.3. Provision for Sealing.**
- **B7: WTR-1 D S.2.1. Provision for Sealing.**
- **B7: MFM-1 D S.3.5. Provision for Sealing.**
- **B7: CDL-4 D S.2.5. Provision for Sealing.**
- **B7: HGM-3 D S.3.3. Provision for Sealing.**
- **B7: EVF-1 D S.3.3. Provision for Sealing.**

- **B7: TIM-1 D S.4. Provision for Sealing.**
- **B7: GMM-2 D S.2.5. Provision for Sealing.**
- **B7: MDM-1 D S.1.11. Provision for Sealing.**

OWM - The intent of proposed new paragraph G-S.8.2. is to address the sealing of devices and systems adjusted using a removable digital storage device, e.g., an SD card, memory stick, etc., that must remain in the device in order for the device to be operational. All other items in this block:

1. provide an exemption to current sealing requirements in instances where the calibration or configuration parameters of the devices (or systems) for which the code applies are changed using a digital storage device that must remain in the device (or system) for it to be operational; and
2. directs those performing the inspection to paragraph G-S.8.2. when the exemption noted in 1. above applies.

OWM recommended this block of items for vote at the 2018 NCWM Interim Meeting believing this proposal had been fully developed and vetted at that time. Shortly after the 2018 NCWM Interim Meeting, however, OWM received an inquiry from a meter manufacturer asking if connecting a laptop computer via cable to configure the device would be considered removable media? It was not OWM's intention that proposed new paragraph G-S.8.2. apply to a device or system that can be adjusted using a laptop that gets attached to a device to make configuration changes and then disconnected once those changes have been completed. The intent is that the paragraph apply only to those devices and systems in which a removable digital storage device must remain in the device (or system) in order for it to be operational. To address this new concern and better clarify the application of G-S.8.2., OWM recommends the following changes:

G-S.8.2. Devices and Systems Adjusted Using Removable Digital Storage Device. - For devices and systems in which the configuration or calibration parameters can be changed by use of a removable digital storage device*, such as a secure digital (SD) card, USB flash drive, etc., security shall be provided for those parameters using either (1) an event logger in the device; or (2) a physical seal that must be broken in order to remove the digital storage device from the device (or system). If security is provided using an event logger, the event logger shall 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. In addition to providing a printed copy of the information, the information may be made available electronically. 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.)

***Applies only to removable digital storage devices that must remain in the device or system for it to be operational.**

(Added 20XX)

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agrees with the submitter that this group of items is fully developed and recommends it be moved forward to the national committee as a voting item as proposed.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments from Mrs. Tina Butcher (OWM), the submitter of the item. Mrs. Butcher noted that OWM took on the responsibility for this item after initial work done by the NTEP Grain Sector. OWM provided the recommendations in this item to the S&T Committee at the 2017 Annual Meeting with a recommendation that it replace the Item Under Consideration and be forwarded to the regional meetings for consideration in the upcoming cycle. The proposal recommends establishing a new paragraph in the General Code to address devices that are adjustable through use of removable digital media such as SD cards and flash drives. The proposal also recommends the addition of paragraphs in specific device codes which refer to the General Code paragraph for devices that are adjusted in this manner. This approach would, hopefully, eliminate potential conflicts with device types that are covered under existing sealing requirements and enable the current definition for "remote configuration capability" to remain intact. Russ Vires, speaking on behalf of SMA, noted that SMA has not met since the most recent recommendations presented by the submitter. Thus, SMA has no comments at this point, but will

review the proposed changes at its fall meetings and provide input at that time. The Committee received no other comments on this item. The Committee noted the title of the item needs to be changed to reflect the proposals submitted to the NCWM S&T Committee in July 2017. The SWMA recommends that this item be presented for a vote.

NEWMA – Spring 2018 Annual Meeting: The SMA commented that they look forward to further information on these items. Previously there were questions on whether or not a laptop computer would be classified as a removable digital storage device. Updates by the submitter specify that the removal digital storage device must remain in the device in order for the device to be operational. NEWMA believes this item is making progress and recommends it continue to be developed

CWMA – Spring 2018 Annual Meeting: Having heard no comments, the committee agrees with NIST that this item is ready for voting at the next NCWM cycle. To address a concern raised after the 2018 NCWM Interim Meeting by a meter manufacturer, OWM commented it plans to develop additional clarifying language for proposed new paragraph G-S.8.2. This language is intended to make clear that paragraph G-S.8.2. is not intended to apply to a portable external device attached to a weighing or measuring device or system to change the configuration or calibration parameters.

SMA - Spring 2018 Meeting: The SMA looks forward to further information on these items. The SMA appreciates the clarification of the metrological configuration parameters and the addition of a physical seal provision.

Stand-Alone Items

GEN-GENERAL CODE

Gen-3 G-A.1. Commercial and Law-Enforcement Equipment. and G-S.2. Facilitation of Fraud.

OWM – This item is in an “Assigned” status. A work group is being formed to carry out the instructions provided by the Committee.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA recommends this item be continued as a developing item. We believe that the item has merit, however we would like to see a definition of “access” i.e. what constitutes access? In addition, what is the definition of “master key, universal key, and universal tools”? We are also concerned that with this item being included in the general code, it is very broad in the devices that will be affected by this code change, and we feel that industry needs time to vet the item in addition to an OWM review. We also recommend the submitter consider the addition of a user requirement requiring the owner/operator to utilize the security features of the device. There was also a concern that this item was included under “Facilitation of Fraud” in G-S.2. because that code requirement is generally understood to be facilitation of fraud by an owner/operator rather than someone trying to gain customer information through a skimming device installed outside of the owner/operator’s knowledge.

SWMA - Fall 2017 Annual Meeting: Some felt that the issue may not address metrological functions and, therefore, questioned whether it falls under weights and measures jurisdiction. Others pointed out that there are other items addressed by NIST Handbook 44 which do not speak to metrologically significant functions or features. The Committee heard multiple comments indicating concerns about this issue and the need for these devices to be addressed. The Committee believes that the item has merit. Consequently, based on the comments received, the Committee felt like this item needed additional input and development. However, after considering additional comments during the Committee’s voting session, including comments from the submitter questioning what additional work would be needed, the Committee decided to change the status of this item to “Voting” and SWMA agreed to recommend it as a Voting item on NCWM’s agenda.

NEWMA – Spring 2018 Annual Meeting: The SMA commented that they oppose the item and recommend withdrawal due to the topic not being within the scope of Weights and Measures. Another comment was heard supporting the SMAs position. NEWMA also heard that W&M should provide some enforcement but that it should be done in different regulations. NEWMA recommends this remain as an assigned item at this time to give the task group an opportunity to develop this further.

CWMA – Spring 2018 Annual Meeting: The Committee did not solicit comments. The CWMA looks forward to more information on the pending formation of an assigned group.

SMA – Spring 2018 Meeting: The SMA opposes this item and recommends it be withdrawn. This topic is not within the scope of Weights & Measures.

SCL - SCALES

SCL - 6 S.1.2.2.3. Deactivation of a “d” Resolution (Carry-Over Item)

OWM – OWM’s comments and recommendations to this item remain unchanged since the 2018 NCWM Interim Meeting and are as follows:

OWM drafted the current proposal after learning in 2017 that some Class I and II scales equipped with a value of “e” that differs from “d” may not round properly (i.e., to the nearest minimum unit that can be indicated) if the “d” resolution is simply deactivated or turned off. We believe the proposed new paragraph is a necessary addition to make officials and others aware of this possible “round off” problem, especially since paragraph S.1.2.2., which was added to the Handbook in 2017, requires the value of “e” and “d” to be the same on Class I and II scales used for direct sales. With the adoption of paragraph S.1.2.2., we envision the possibility of some scale distributors/installers and perhaps users too, not realizing the effect of their actions, electing to simply deactivate the “d” resolution to allow use of a particular scale for direct sales. The round-off error caused by this action will likely be unapparent and only disclosed by performing special tests using error weights, which, on a Class I or II scale, would most typically have to be performed in a lab setting given the accuracy and resolution required for the test weights.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA believes that this item has merit and is sufficiently developed to be a voting item.

SWMA - Fall 2017 Annual Meeting: No comments were received on this item and the SWMA recommends it be voting as presented.

NEWMA – Spring 2018 Annual Meeting: A comment from NIST explained that they believe this is a necessary addition to make officials and others aware of possible round off errors. The SMA took no position on this item and believed the requirements are already covered in HB 44. NEWMA believes this item is developed and ready to be voted on.

CWMA – Spring 2018 Annual Meeting: The SMA believes the requirements for this item are already covered in HB 44, and therefore take no position on this. OWM commented there could be a problem if “d” is disabled by a distributor or manufacturer. The CWMA believes this item is ready for vote.

SMA - Spring 2018 Meeting: The SMA takes no position on this item. The SMA believes the requirements for this item are already covered in Handbook 44.

SCL - 7 S.1.8.5. Recorded Representations, Point of Sale Systems (Carry-Over Item)

OWM - This item narrowly missed being adopted by the NCWM in 2017 (one-vote short) and was returned to the Committee. Shortly after the 2017 NCWM Annual Meeting, the Committee agreed to amend the proposal at the request of the submitters by extending the date in which the tare weight information would be required to be recorded on the sales receipt an additional two years (that is, until 2022). Two additional changes agreed to by the Committee were to amend the “Purpose” of the item to better reflect the reasons for the proposed changes and reorganize the paragraph to make it clear that the tare weight requirement is nonretroactive.

OWM agrees additional information needs to be made available to customers for items weighed on a scale interfaced with a cash register in a POS system. OWM believes, however, that more work is still needed on this proposal and supports the recommendations of two of the original submitters of this item at the 2018 CWMA Annual Meeting to assign it to a work group for further revision in hopes that a compromise proposal between industry and regulators can be agreed upon to advance this item.

In comments and recommendations provided at the 2018 NCWM Interim Meeting, OWM noted that there are a variety of systems in the marketplace with various configurations of scales, displays, and receipts. Some systems already provide many or all details of a transaction, such as the gross weight, net weight, and/or tare weight. Others have more limited capability, displaying only the gross weight on the customer display and the net weight on the printed receipt, with neither weight identified as such. It is the latter situation that seems to be of most concern to the submitter and others in the community.

In consideration of the possible development of a compromise proposal by an assigned work group, OWM offers the following thoughts on how additional information might be made available to customers and operators of POS scale systems to possibly help form a starting foundation for discussion and based upon OWM’s own research into this item:

- A common component to all these systems is a “live” display of gross weight. Many current systems provide not only a “live” display of gross weight, but also, and on the same video terminal, the transaction information for each item weighed and priced at the checkout. Much of this “displayed” transaction information is identical to that which is required on the sales receipt by paragraph S.1.8.5. and oftentimes includes the net weight. Thus, in many cases, both the “live” gross weight and net weight of the different items weighed can be viewed simultaneously by customers and operators once a price look up code has been entered. OWM notes these values oftentimes are not properly identified as gross and net on the display as they should be.

There are a number of similarities in these two types of scale applications; for example, both are used for direct sale. Given the similarities and the various pieces of information displayed, might those requesting that the tare weight information be recorded on the sales receipt consider alternatives to making this information available to the operator and customer? For example, rather than requiring the gross weight and tare weight values to be recorded on the sales receipt, might an acceptable alternative be to allow both the gross weight and net weight values be displayed simultaneously on the same video terminal at the front-end checkout once the PLU code of the item being weighed has been entered? In this way, providing both the display of gross weight and net weight values that are properly identified (e.g., “lb,” “gross,” and “net”) one could only conclude that because the net value is less than the gross value that a tare had been taken. Allowing this information to be displayed on a video terminal of the POS system, rather than requiring the tare weight be recorded on the sales receipt, may also provide opportunity for improving harmonization of requirements between stand-alone retail-computing scales and scales interfaced with cash registers in POS systems.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA is recommending this item to be an informational item.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments from Mrs. Tina Butcher (OWM) who noted that the title of the item in the Appendix to the Committee’s report still includes a reference to a part of the original proposal which would have required the tare weight to be printed on random-packed products. That portion of the proposal was removed from the proposal prior to the NCWM Annual Meeting. In addition, she noted that the

submitters of the item made modifications to the proposal following the 2017 Annual Meeting. The modifications recommend extending the nonretroactive date to 2022 (rather than 2020) and moving the reference to “tare weight” to the last item in the list. The modifications are shown below and appear in the Appendix to the Committee’s report.

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 stand:

- (a) the net weight;¹
- (b) the unit price;¹
- (c) the total price; and
- (a) the product class or, in a system equipped with price look-up capability, the product name or code number.

(e) the tare weight¹
[Non-retroactive January 1, 2022]
(Amended 20XX)

¹ For devices interfaced with scales indicating in metric units, the unit price may be expressed in price per 100 grams. Weight values shall be identified by kilograms, kg, grams, g, ounces, oz, pounds, or lb. *The “#” symbol is not acceptable.*
[Nonretroactive as of January 1, 2006]
(Amended 1995 and 2005)

The Committee heard some comments on the proposal indicating there was some confusion about the purpose of the proposal and what specifically was being recommended. The Committee heard multiple comments, both in support of and in opposition to the proposal and consequently, the SWMA recommended the item for a vote to allow the membership to decide.

NEWMA – Spring 2018 Annual Meeting: NEWMA heard several comments in opposition of this item, including those from the SMA. NIST believes the compliance this item aims for could be achieved in a separate manner. Due to a lack of support, NEWMA recommends this item be withdrawn.

CWMA – Spring 2018 Annual Meeting: Both submitters of this item requested this item be changed to an Assigned status in order to be assigned to a task group. The submitter would like to see this task group formed with all interested parties. Based on comments heard by the submitters, the CWMA agrees with this decision.

SMA - Spring 2018 Meeting: The SMA opposes this item. Since regulators verify that the tare values in POS systems are accurate, the SMA feels that the proposal would provide little or no benefit to the consumer.

Others- The Committee also received written letters in opposition to this item from the Food Marketing Institute, Florida Retail Federation (Florida Grocers Association), NC Retail Merchants Association, SC Retail Association and Harris Teeter. These letters have been posted to NCWM’s website.

SCL - 8 Sections Throughout the Code to Include Provisions for Commercial Weigh-in-Motion Vehicle Scale Systems (Carry-Over Item)

OWM - OWM believes this item still requires substantial development before it can be fully considered. Since January’s 2018 NCWM Interim Meeting, the SMA, NEWMA, and the CWMA have recommended downgrading the

status of this item to either “Informational” or “Developing,” citing the need for Rinstrum to provide adequate test data that shows its equipment can perform to within the accuracy claimed and/or additional work being needed to fully develop the item. Additionally, Mettler-Toledo LLC notified Mr. Don Onwiler (NCWM Executive Director), Mr. Ivan Hankins (S&T National Committee Chair) and the WIM Vehicle Scale Task Group expressing concern that the code changes proposed by this item do not adequately address the testing procedure to assure correct weighing performance when placing a WIM vehicle scale system into service and proposing substantial additional changes to the current proposal.

OWM’s concerns and those of others have yet to be addressed. OWM was surprised to learn of the TG’s January 2018 recommendation to move the item forward for a vote, particularly as: 1) the TG at its December 2017 teleconference (with OWM in attendance) did not agree that this item was ready for vote; and 2) the technical deficiencies remain unresolved.

No technical justification has been provided to support elevating this item to a voting status. The following gaps and concerns have yet to be addressed:

- 1) No evidence of a WIM vehicle scale system being manufactured that meets Accuracy Class IIIIL Maintenance and Acceptance tolerances now specified in this proposal under all conditions of anticipated use has been received. Data received thus far fails to support Rinstrum’s original claim that its equipment can meet a 0.2% maintenance tolerance when weighing entire vehicles. This was a very important factor leading to the creation of the Task Group because current HB 44 maintenance tolerances applicable to Class IIIIL scales is one division of allowable error for every 500 divisions of test load, which equates to 0.2%.
- 2) It is inappropriate to expect NTEP to develop test procedures for type evaluation when members of the WIM Task Group have not been able to agree on minimum field test procedures necessary to verify the accuracy of a WIM vehicle scale system to the tolerances specified; and
- 3) Adequate test standards have not been identified and approved.

Additional background corresponding to these gaps is included below:

Since the formation of the TG, Rinstrum has hosted two field demonstrations to prove the capabilities of its equipment to members of the TG. Due to scheduling conflicts, OWM was not able to participate in either one, but did receive updates from members of the TG who were able to witness the testing. The feedback OWM received on the first field demonstration was that Rinstrum’s WIM system wasn’t able to consistently repeat indications to within what might be considered an acceptable level when weighing the same trucks multiple times; and, that individual test results exceeded tolerances. It was reported to OWM that results from the second field demonstration proved inclusive due to poor weather conditions.

With regard to the TG’s efforts to develop test procedures for which members can agree, it shouldn’t be the responsibility of a Task Group to develop test procedures to prove whether or not equipment can achieve the performance level claimed by the submitter of an item. It should be the submitter’s responsibility to disclose to the Committee the procedures used and the data collected to be able to justify that claim and then for the Committee to decide if that data and the procedures used in collecting it are adequate.

It is not appropriate for members of a Task Group to be developing proposed changes to HB 44, which are intended to address commercial WIM vehicle scale systems of an Accuracy Class IIIIL without first knowing for certain there’s a system being produced that can meet those tolerances under all conditions of normal/anticipated use. If the weights and measures community is to accept these systems for commercial application, it must first be shown that the weights obtained from using them comply with the commercial tolerances under all conditions of anticipated use. This has not yet occurred.

Given that the TG seems to be at an impasse, OWM recommends this item be downgraded to a Developing status and the Task Group put on hold until such time that Rinstrum or some other weigh-in-motion (WIM) vehicle scale manufacturer can conclusively demonstrate to the Committee that the WIM system it produces is capable of meeting the commercial tolerances specified under all conditions of anticipated use. OWM emphasizes its use of the words

“under all conditions of anticipated use” because no limitations of use have been specified by Rinstrum (in its proposal) or the TG and therefore, the expectation is that these systems be able to provide accurate weighments (to within the tolerances specified) on any and all vehicles weighed regardless of number of axles, axle configuration, double wide or normal width tires, or any other variable one might think could possibly affect the accuracy of a vehicle weighment.

Alternatively, the Committee might consider an Assigned status if it believes further development should be completed by the TG or that members of the TG should be involved in possibly helping to develop some specific steps that WIM vehicle scale manufacturers would need to follow in their collection of test data to be able to prove to the Committee that their systems are capable of performing to within the commercial tolerances specified under all conditions of anticipated use. OWM believes comparison test data will be needed to make this determination; that is, comparison data from having weighed many different vehicles statically and as a single draft on an accurate full-length vehicle scale and then on the WIM vehicle scale system. OWM envisions members of the TG not only being involved in developing the steps that a WIM vehicle scale manufacture would need to follow, but also, in identifying the different kinds and number of vehicles that would need to be weighed for comparison.

If the Committee agrees to downgrade this item to a developing or assigned status, might the Committee also consider providing Rinstrum or the TG the information the Committee would need to be able to advance this item forward in the future. In particular, clear guidance should be given regarding the collection of test data.

OWM is not aware of a means to determine the mass of a vehicle such that its combined error and uncertainty when used without correction is less than one-third the tolerance of the device being tested when the tolerance specified for that device is 0.1% (of applied test load) acceptance and 0.2% (of applied test load) maintenance. For the purpose of data collection, OWM believes it very achievable to develop procedures for comparison testing, the results of which can be used to provide indication of whether or not a particular WIM vehicle scale system is capable of performing to within the tolerances specified under all conditions of anticipated use. However, regular routine field testing of these systems will likely prove much more problematic.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item move forward as an informational item. The WIM Vehicle Scale Task Group has circulated a white paper during the open hearings requesting input from the membership of the region. The WWMA’s S&T Committee encourages those wanting to provide input to contact Mr. Alan Walker (FL) Chairman of the Task Group, or Mr. Tim Chesser (AR) Co-Chairman of the Task Group. Several of those giving testimony at the open hearings stated that they would like the acceptance tolerance to equal ½ the maintenance tolerance for both static and dynamic testing. Another comment was heard suggesting the acceptance tolerance be equal to ½ the maintenance tolerance for static testing and equal to the maintenance tolerance for dynamic testing.

SWMA - Fall 2017 Annual Meeting: The SWMA’s S&T Committee heard comments from members of the WIM Task Group, who noted that a lot of progress has been made, but additional input is still needed. Multiple weighing device manufacturers, who are also members of the Task Group, expressed concerns about modifications to the tolerances and urged caution in considering the impact such changes might have. There were also questions raised regarding how the tolerance structure was established for other dynamic systems, including in-motion monorail scales and railway track scales, and some noted that review of the history for how these tolerances were established is warranted. Some also commented that additional work is needed on the test procedures; until clear test procedures can be established and agreed upon, there is no evidence that the systems can meet the proposed tolerances under conditions of normal use. The Committee also heard comments indicating that more data is needed to make an informed decision regarding changes to the tolerances. The Chairman of the Task Group, Alan Walker, commented that prior to elevating this item to a Voting item, the Task Group needs additional input, particularly from weights and measures jurisdictions to assess what additional work is needed, and he noted this may include collecting test data demonstrating that systems can meet the tolerances. The SWMA recommends this item remain “Informational” until such time that additional information has been gathered and a recommendation made by the Task Group to the NCWM S&T Committee to change the status of the item

NEWMA – Spring 2018 Annual Meeting: During the NCWM committees work session, it was agreed to change the tolerance values used during dynamic testing as recommended by the task group. The NEWMA committee heard from

the submitter in support of this item to be voted on. Other comments were heard that this item has moved too fast and that there isn't enough supporting test data to justify a voting item. NIST believes there are still a number of issues and that there is further developing to be done. The SMA opposes this item and recommends it to be informational. NEWMA recommends that this item be downgraded to Developing and that the submitter provide supporting data from testing.

CWMA – Spring 2018 Annual Meeting: The CWMA recommended this item be downgraded to an Assigned item on the NCWM agenda. The committee received written comments from the SMA and Henry Oppermann opposing the item, and recommending it be downgraded to Informational for further work. Comments were heard from Rinstrum, Richard Harshman, Lori Jacobsen, Lou Straub, and Richard Suiter. The CWMA would like to see this type of technology develop, but believes the submitter needs to provide adequate data and the test procedures used to collect said data to support the claim this equipment is capable of meeting the required tolerances in HB 44 under all conditions of anticipated use.

SMA - Spring 2018 Meeting: The SMA opposes the item as written and recommends the item be downgraded to Informational for further work. The SMA appreciates the work that the WIM Task Group has done thus far, but believes that further work needs to be done regarding the testing methods to be used. Additional suggestions have been developed which should be considered.

Others – Letter of concern from Russ Vires (Mettler-Toledo) to Don Onwiler (NCWM Executive Director) and Ivan Hankins (NCWM S&T Committee Chair) dated April 19, 2018 requesting the status of the item be downgraded to Informational to provide the task group additional time to consider an alternative test procedure developed by Mettler-Toledo and other alternative proposals for the testing process. A copy of the letter is posted on NCWM's website. Mr. Vires also sent an e-mail to members of the WIM Vehicle Scale Task Group on May 15, 2018 making them aware of Mettler-Toledo's concerns with this item. The e-mail included an attached file detailing those concerns and Mettler-Toledo's recommended changes to the current proposal.

The Committee also received written comments in opposition to the item from Henry Opperman dated January 17, 2018 and April 16, 2018, raising several concerns and requesting the item be downgraded to a developing status. Copies of written comments are posted on NCWM's website.

ABW - AUTOMATIC BULK WEIGHING SYSTEMS

ABW - 3 A. Application, S Specifications, N. Notes, UR. User Requirements (Carry-Over Item)

OWM – The changes proposed in ABW-3, ABW-4, and OTH-6 are all related attempts to help clarify and make it easier for field officials to determine the proper HB 44 code to apply to some newer automatic weighing systems that have been introduced into the commercial arena. OWM is unable to envision, based upon its review of these three proposals, how the proposals, whether considered individually, or combined and considered as a group, will accomplish this intended outcome. Addressing these issues in a piecemeal fashion may actually result in more confusion.

With respect to this particular item, OWM reiterates its comments included in the analysis it provided to the Committee at the January 2018 Interim Meeting. The proposed changes to the Automatic Bulk Weighing Systems (ABWS) code would expand its application to include some newer automatic weighing systems that currently fail to meet the application of the ABWS code (or the current HB 44 definition of an ABWS). OWM is not convinced this is a technically sound appropriate approach.

The current ABWS code applies to systems that automatically weigh a single commodity in successive drafts; yet we believe it was the submitter's intent in drafting some of the proposed changes that the code also apply to systems that automatically weigh more than one commodity at a time in successive drafts. For example, some seed treatment systems can be programmed to weigh multiple drafts of the same recipe, which oftentimes is made up of different ingredients (commodities) that get mixed together to form the treatment for a particular seed type. The various recipes to be weighed by a system can include not only different ingredients, but also different amounts of those ingredients, both which can affect the price charged to customers. Expanding the application of the ABWS code to address such systems may cause unnecessary confusion. For this reason, OWM prefers maintaining the current ABWS code as is. Perhaps a better approach to addressing these systems and the resulting gaps in HB 44 requirements would be to form a small group to further study such systems and recommend Handbook 44 changes, possibly including consideration of a separate code to address these and other types of dynamic weighing systems.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item remain a developing item and understands the submitter is still working on the item. The WWMA would welcome input from other individuals on this item as there was only one comment during the Committee's open hearings.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments jointly on the following items in a "batch": 3200-1 S.1.2. Value of Scale Division Units & Appendix D (Scales); 3202-1 A. Application, S. Specifications, N. Notes, UR. User Requirements (ABWS); and New 28 A. Application and Appendix D. Definitions – batching systems.

The Committee heard comments from Russ Vires, on behalf of SMA, noting that the SMA took no position on this item. The Committee heard no other comments on the item. The Committee considered recommending this item be maintained as a "Developing" item; however, after further discussion, the Committee noted that the item has been on the agenda for multiple years with little change. Consequently, the Committee recommended the item be withdrawn and, should the submitter want to resubmit the item, could do so in the future. The SWMA agreed to recommend the items in this batch be withdrawn.

NEWMA – Spring 2018 Annual Meeting: The submitter is still making changes on this item based on comments and feedback from the regional meetings. NIST recommends a small working group to study the difference in weighing single commodities in successive drafts versus automatically weighing more than one commodity in successive drafts. NEWMA recommends this item remain developing.

CWMA – Spring 2018 Annual Meeting: The committee received written comments from the SMA stating they take no position on this. The submitter believes the item is ready for vote. CWMA recommends maintaining this item as developing until it can be voted on at the next (2019) NCWM cycle.

SMA - Spring 2018 Meeting: The SMA takes no position on this item at this time and looks forward to additional analysis performed by the appropriate stakeholders.

Other- Written comments, dated April 16, 2018, were received from Henry Oppermann (Weights and Measures Consulting) opposing this item and in particular, the definition proposed in the proposal. These comments have been posted on the NCWM's website.

ABW - 4 A. Application and Appendix D: Definitions – batching system

OWM – As noted in OWM's comments and recommendations for ABW-3, the changes proposed in ABW-3, ABW-4, and OTH-6 are all related attempts to help clarify and make it easier for field officials to determine the proper HB 44 code to apply to some newer automatic weighing systems that have been introduced into the commercial arena. OWM is unable to envision, based upon its review of these three proposals, how the proposals, whether considered individually, or combined and considered as a group, will accomplish this intended outcome. Addressing these issues in a piecemeal fashion may actually result in more confusion.

It is OWM's understanding that this proposal is intended to prevent the possible application of the Handbook 44 ABWS Code by field officials and others to automated weighing systems where the Scales Code is the proper code to be applied. The definition proposed defines a process and not a system comprised of specific weighing and/or measuring equipment. We fail to see how such a definition, coupled with the added exception to the ABWS Code being proposed would make it any easier for officials and others to determine which code (ABWS or Scales) applies to a particular automated weighing system.

OWM continues to believe that any individual component (weighing or measuring device) used in a batching system would be properly evaluated using the HB44 Code appropriate for that particular type of device. We further believe that the status of a device as part of a batching system should not alter the determination for the proper standard to be used in its evaluation.

OWM cannot think of any reason to exclude the use of an ABWS as part of a batching system, which would result should proposed paragraph A.2. Exceptions. be adopted. OWM maintains that an ABWS, like many other types of weighing and/or measuring devices, can be used to determine specific quantities of weight which could then be combined with other ingredients to produce a finished product. We fail to recognize the rationale used as a basis for the notion that an ABWS could not possibly be used as a component in a batching system and find such an exemption to be overly restrictive, especially to the manufacturers of ABWSs.

As noted in previous OWM comments and recommendations to this item, OWM believes the application of the Handbook 44 ABWS Code is appropriate for any weighing device/system that complies with the criteria provided in paragraph A.1. "General" in Section 2.22. of Handbook 44 including:

- automatic weighing of a bulk commodity;
- performed in successive drafts of a predetermined amount;
- automatically recording the no-load and loaded weight values of each draft; and
- the totalization or accumulation of the net weights of all successive drafts.

If the concern is that the ABWS code as currently written does not adequately address some types of dynamic weighing systems, then consideration needs to be given to possibly modifying the ABWSs code or the Scales code to better address these types of systems. Alternatively, perhaps consideration could to be given to developing a separate code to better address these and other types of dynamic weighing systems.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA recommends this item to be continued as an informational item because the committee feels it has merit, however, it failed to make the printed agenda even though it was submitted on time. There was a lack of testimony in the open hearings due to the item not being a part of the printed agenda. This item is a replacement of voting item 3200-1.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments jointly on the following items in a "batch": 3200-1 S.1.2. Value of Scale Division Units & Appendix D (Scales); 3202-1 A. Application, S. Specifications, N. Notes, UR. User Requirements (ABWS); and New 28 A. Application and Appendix D. Definitions – batching systems.

The Committee heard comments from the submitter of the item, Richard Suiter. Mr. Suiter provided an overview of the item, including how the issue originated. He also displayed a picture of a sample system illustrating how one of the more modern "batching systems" are laid out. The Committee also heard comments from Tina Butcher (OWM) questioning whether a separate code addressing dynamic weighing systems might be warranted, noting that the ABWS Code didn't originally envision these new systems, but the current Scales Code may not include the necessary safeguards to automatically ensure a zero start. Mr. Suiter noted that he had recommended the addition of a specification in an earlier proposal, but that was not accepted by the NCWM. He noted that there is an urgency to include something to address these systems as opposed to waiting for the development of a separate code. The SWMA recommends the item be designated as a Voting item.

NEWMA – Spring 2018 Annual Meeting: A comment was heard from NIST opposing this item as they feel that the definition proposed is a generic description of a process rather than a description of a device or system. The SMA

opposes this item as batching systems are not commercial devices and should not be included in HB44. No other comments were heard. NEWMA recommends that this item be withdrawn.

CWMA – Spring 2018 Annual Meeting: The Committee received written comments from the SMA and Henry Oppermann (W&M Consulting LLC) opposing this item. Richard Harshman (OWM) commented that the proposed exception A.2. is not appropriate, and the definition now provided applies to a process rather than a commercial device. Richard Suiter’s comments are that not all automated systems fall into ABWS code, and need to be evaluated using the Scales code. The CWMA agrees and believes this item is ready for vote.

SMA - Spring 2018 Meeting: The SMA opposes this item. Batching systems are not commercial devices and therefore should not be included in Handbook 44.

Other - Comments in opposition to this item were submitted by Mr. Henry Oppermann (Weights and Measures Consulting) in a letter dated 12/27/17, which is posted on NCWM’s web site.

LMD - LIQUID MEASURING DEVICES

LMD - 2 S.1.6.7. Recorded Representation, S.1.6.8. Recorded Representations for Transactions Where a Post-Delivery Discount(s) is Provided. and UR.3.4. Printed Ticket (Carry-Over Item)

OWM – As noted in its analysis for the 2017 Interim and Annual Meetings, OWM concurs that providing the dispenser designation on the printed ticket may be beneficial to the consumer and official in identifying the receipt for a particular transaction.

The provisions in paragraph UR.3.4. were originally added to NBS Handbook 44 in 1967 at the request of industry to address technology limitations which would have made it impractical from a cost perspective to print all three values. OWM continues to question whether, given today’s technology, the provision to allow the remaining values to be written in hand script is still appropriate or if a system that is capable of providing a printed ticket should be capable of printing all the values. However, there may still be a need to allow for this option and this comment shouldn’t detract from moving forward with the proposal.

OWM believes the addition of the proposed changes to paragraphs S.1.6.7. and S.1.6.8. make this proposal more complete and help ensure that the dispenser designation information will be included on receipts issued for systems covered under those paragraphs. OWM suggests that the Committee consider and address one concern regarding the effective dates prior to moving this item forward for a vote. The requirements in the proposed changes to paragraphs S.1.6.7. and S.1.6.8. are *nonretroactive* as of January 1, 2021. However, the changes to paragraph UR.3.4. are proposed to become *effective (?) and retroactive* as of that date. Thus, in 2021, UR.3.4. will apply to all systems in which a printed ticket is issued. In the meantime, the italicized text may cause confusion. An added concern is that, in 2021 the User Requirement becomes retroactive, but the requirements in S.1.6.7. and S.1.6.8. will remain non-retroactive. This means that users of systems that are not subject to the nonretroactive requirements in S.1.6.7. and S.1.6.8. will be forced hand write the information on the receipt or modify their systems in some other fashion.

At the Spring 2018 CWMA meeting, the submitter suggested making the new provision proposed to be added to UR.3.4. *nonretroactive* as of January 1, 2021. OWM believes this option would not only clarify the requirement, but would also eliminate possible confusion in applying the Specifications and the User Requirements. However, since equipment will be required to print the desired information at that point, OWM questions whether the change is still needed to the User Requirement and suggests the Committee consider deleting the proposed changes to the User Requirement from the Item Under Consideration.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: This item was originally presented by the Committee in the voting session as a voting item on the voting consent calendar. Ron Hasemeyer with Alameda County, CA asked for it to be removed from the consent calendar during discussion in the voting session. It was removed and voted on individually, and the vote failed. The Committee briefly met during a recess in the voting session and agreed that this item should move forward as a developing item. This was presented when the voting session resumed and the membership agreed to the “Developing” status.

SWMA - Fall 2017 Annual Meeting: The Committee heard no comments on this item. The Committee acknowledged that the submitter has modified the proposal from the original (which only proposed changes to the user requirement UR.3.4.) to include proposed changes to two specifications paragraphs, S.1.6.7. and S.1.6.8. During its work session, the Committee acknowledged that there was general support during the Measuring Sector’s recent meeting for including identifying information for the pump on printed tickets/receipts, but there should be accompanying requirements in the “Specifications” section of the code. Given that the item has been updated (to include proposed specifications) based on comments received during the NCWM meetings and that there were no comments during the SWMA meeting, the SWMA recommends this item as a Voting item.

NEWMA – Spring 2018 Annual Meeting: Comments were heard recommending the item be nonretroactive in order to prevent hand written tickets on all the pumps unable to include numbers on printed tickets or on pumps that do not print tickets. NIST comments agreed that the item in section UR.3.4.Printed Ticker should read “Nonretroactive January 1, 2021”. NEWMA recommends this item move forward for a vote with the changes that section UR.3.4.Printed Ticker read “Nonretroactive January 1, 2021”.

CWMA – Spring 2018 Annual Meeting: The submitter noted that the changes proposed to paragraph UR.3.4. be made non-retroactive as they were intended. The CWMA agreed to recommend the item be presented for vote at the 2018 NCWM Annual Meeting with the following editorial change to paragraph UR.3.4. as requested by the submitter:

UR.3.4. Printed Ticket. - The total price, the total volume of the delivery, ~~and~~ the price per liter or gallon, and a corresponding alpha or numeric dispenser designation* shall be shown, either printed by the device or in clear hand script, on any printed ticket issued by a device and containing any one of these values.
(Amended 2001 ~~and~~ 2019) *(Nonretroactive as of Retroactive January 1, 2021)

LPG - LPG AND ANHYDROUS AMMONIA LIQUID-MEASURING DEVICES

LPG -3 S.2.5. Zero-Set-Back Interlock, Stationary and Vehicle Mounted Meters, Electronic

OWM – OWM reiterates its comments included in the analysis it provided to the Committee at the January 2018 Interim Meeting. OWM agrees with the submitter that additional requirements should be added to the LPG code for a zero-set-back interlock for electronic stationary (other than stationary retail motor fuel dispensers) and vehicle-mounted meters. OWM recommends adding a parenthetical to the title to limit the application of the new paragraph to stationary meters that are not used in retail motor-fuel applications; this will eliminate redundancy and help avoid confusion over how the **existing** paragraph S.2.5. Zero-Set-Back Interlock for Stationary Retail Motor-Fuel Devices (which includes similar requirements to the proposed new paragraph) would apply.

The last sentence of proposed **new** paragraph S.2.5. (S.2.5. Zero-Set-Back Interlock, Stationary (other than Stationary Retail Motor-Fuel Dispensers) and Vehicle-Mounted Meters, Electronic) includes a time-out limit. We agree a time-out specification is appropriate; however, we suggest that it be addressed in a separate paragraph. During our analysis, we noted that a new paragraph (S.1.6.10. Automatic Timeout, Pay-at-Pump Retail Motor-Fuel Devices) was added to the LMD Code in 2017 specifying an automatic timeout for retail motor-fuel applications where payment is

rendered via a card at the dispenser; however, a corresponding paragraph to address LPG systems used in RMFD applications was not added at the same time. In keeping with the S&T Committee’s past efforts to align requirements for RMFDs in the LMD Code and the LPG & Anhydrous Ammonia Liquid-Measuring Devices Code, we suggest the Committee consider adding another paragraph to the proposal to mirror this requirement in the LMD Code. By moving the timeout limit in the proposed **new** paragraph S.2.5. into a separate paragraph (S.2.6. Automatic Timeout, Stationary (Other than Stationary Retail-Motor Fuel Dispensers)), the format of requirements for (1) zero-set-back interlock requirements and (2) timeout provisions will be consistent for stationary retail motor-fuel dispensers and other types of stationary devices.

Thus, OWM offers the following alternate proposal for the submitter’s consideration as the item is further developed. OWM concurs with comments from the 2018 Interim Meeting regarding the need to propose a specific nonretroactive date to allow for interested parties the opportunity to consider the effective date.

S.2.5. Zero-Set-Back Interlock, Stationary (Other than Stationary Retail Motor-Fuel Dispensers) and Vehicle-Mounted Meters, Electronic. - A device shall be so constructed that after an individual or multiple deliveries at one location have been completed, an automatic interlock system shall engage to prevent a subsequent delivery until the indicating and, if equipped, recording elements have been returned to their zero position.
(Added 20XX) (Nonretroactive as of 20XX)

S.2.6. Automatic Timeout, Stationary (Other than Stationary Retail Motor-Fuel Dispensers) and Vehicle-Mounted Meters, Electronic. For individual deliveries, if there is no product flow for three minutes the transaction must be completed before additional product flow is allowed. The 3-minute timeout shall be a sealable feature of an indicator.
(Added 20XX) (Nonretroactive as of 20XX)

S.2.7. Zero-Set-Back Interlock for Stationary Retail Motor-Fuel Devices. – A device shall be constructed so that:
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S.2.8. 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.
(Added 20XX) (Nonretroactive as of 20XX)
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Renumber remaining paragraphs.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item be carried forward as a developmental item, with the desire to hear input from the other regions in addition to hearing from industry including the meter manufacturers association.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments from the submitter, Ken Ramsburg, MD, who noted that the purpose of the proposal is to align the LPG & NH3 code with requirements already included in the Vehicle-Tank Meters Code. No comments were received in opposition to the proposal and the SWMA recommends the item for a vote.

NEWMA – Spring 2018 Annual Meeting: A comment included support for the item but recommended an editorial change to use expression in the same manner as the code includes both “three minutes” and “3-minute”. NIST recommends that additional requirements should be added and further developing needs to be done. NEWMA recommends the item remain developing

CWMA – Spring 2018 Annual Meeting: No comments were heard on this item. The CWMA recommends the item as a developing item on the NCWM agenda.

LPG - 4 N.3. Test Drafts. (Carry-Over Item)

OWM – OWM considers this item and MFM-2 N.3. Test Drafts similar and consequently, offers the following comments and recommendations to these two items:

Since 2015, the S&T Committee has had items LPG-4 N.3. Test Drafts and MFM-2 Test Drafts (previously numbered 3302-1 and 3307-1 and 332-5 and 337-3) on its agenda related to the use of what are being referenced as “transfer standards” (also referred to as “master meters” by many). OWM recognizes many in the weights and measures community, regulators and service companies alike, would like to use “master meters” for testing products such as LPG and compressed natural gas (CNG). OWM believes using such test equipment, if appropriately verified, may offer advantages in terms of: (1) practicality for some types of measurements; (2) cost effectiveness; (3) saving time; and (4) increasing safety. However, simply adding a paragraph to the notes sections of these two codes does not ensure that the use of such devices as a standard for testing is appropriate. OWM offers three vital points for the community’s consideration as it deliberates on modifying handbook codes to recognize the use of alternate test apparatus. Work to establish uniform specifications and terminology for test standards is still needed in, as a minimum, the following areas:

1. Requirements and guidelines for using “legal-for-trade” devices as field test standards, particularly when using commercially available, “legal-for-trade” devices.
2. Adding delivery time requirements when based on adequate data that supports the requirement.
3. Use the term “field standard” to replace terms such as “transfer standard,” “master meter,” and other terms used to describe a standard used to test legal-for-trade devices. These standards would be used to evaluate the performance of devices for type approval and use in field applications. This related issue remains a Developing item on the Committee’s agenda.

OWM offers the following technical comments on each of these points.

1. Requirements for “legal-for-trade” devices used as standards.

When standards are used to test legal-for-trade devices, it is crucial that there be data available to support the NIST HB 44 Appendix A, Fundamental Consideration for testing apparatus; this section states that when the standard is used without correction, its combined error and uncertainty must be less than one-third of the applicable device tolerance.

In previous reviews of these items and comments to the S&T Committee as part of its regular “analysis of issues,” OWM provided a list of the different “essential elements of traceability” that need to be in place before such testing equipment can be recognized as a “standard.” These elements are listed below.

A thorough evaluation of the standard must be conducted that includes:

- collection of data from the use of the standard over wide environmental conditions (since this standard will be used in various locations throughout the U.S.);
- demonstration of its reliability and repeatability over time; and
- determination that its design is suitable so that tests can be conducted under conditions of actual use of the device.

In addition, prior to acceptance of field standards, there are necessary components that should be in place at multiple levels in the weights and measures infrastructure such as:

- Laboratory testing to verify the standard, including:
 - Adequate equipment and facilities for testing the standards in the laboratory.
 - Documented criteria for the standards.
 - For example, a NIST 105 or other document outlining requirements and other criteria.
 - Documented and accepted procedures for testing the standards.
 - Training for laboratory staff.
- Field Testing
 - Training for field staff (service person and regulatory officials).
 - Documented test procedures for use of the standards.
 - For example, an EPO or other documented procedure.
 - Documentary standards to support the use of the standards
 - For example, changes needed (if any) to address the use of the standards to test a particular type of measuring system.
- Other Issues
 - Assessment of the appropriateness of the standard for use in testing commercial measuring (or weighing) systems.
 - Plans for implementation of standards and test procedures and associated training to ensure common understanding and application.

A system is needed for acceptance of field standards that results in the following:

- Manufacturers knowing and applying the requirements for the design of the standard;
- Systematic and appropriate collection of measurement data on proposed new standards;
- States (regulatory authority) having access to the measurement data to determine whether or not a standard meets the requirements; and
- Proper training and procedures for field use of the standards.

OWM developed general guidelines for use in collecting data that States, interested in verification of standards used in field evaluation, may use to collect data. OWM is also working with the Alternative Test Methods Work Group in efforts to analyze and review data collected that can be shared with States.

In addition, OWM recognizes the need to assess the appropriateness of the use of “master meters” as field standards and the need to control the variables associated with using a meter as a field standard. To help the community begin addressing this current gap, OWM is doing work to analyze the issues involved in establishing traceability of such systems to assist jurisdictions in investigating the possibility of using such systems. As part of this work, OWM is purchasing six Coriolis meters as follows to test refined fuels, LPG, and CNG:

- Two ½-inch Coriolis meters
- One 1-inch Coriolis meter
- Two 1½-inch Coriolis meters
- One 3-inch Coriolis meter, and
- One ½-inch meter specifically designed as a master meter to test CNG

OWM will work with states and industry to collect field data to determine if these standards will meet the Fundamental Considerations Section 3.2 in NIST HB 44.

2. Adding “delivery time” requirements when the specified “delivery time” is based on adequate data that supports the requirement.

In its previous analyses, OWM pointed out data needs to be provided to ensure an appropriate time is specified in the requirements for N.3.2. Field Reference Standard Meter Test for delivery of a sufficient test draft. Including a specified time helps ensure a fair test of the device's performance and must take into account the design/technology of test equipment used to test a commercial device. OWM has questioned the basis for the minimum delivery times proposed in the current and earlier versions of the Items LPG-4 and MFM-2 and continues to note no justification has been provided for either the specific time limit suggested or the need for this additional paragraph.

In the most recent version of the proposed N.3.2., the time limit is proposed as one minute "*at the flow rate being tested*" as opposed to one minute at the "*normal discharge rate*" of the device being tested. OWM questions the rationale behind establishing the time frame based on different criteria.

The recommended minimum test procedures specified in NIST EPOs for metering systems requires the following two tests:

- (1) a "normal" test (sometimes referred to as a "fast" test) conducted at the normal discharge rate of the meter in the installation. and
- (2) a "special" test (sometimes referred to as a "slow" test) conducted at a flow rate slightly above the marked minimum discharge rate.

These two tests allow the inspector to assess: (1) the condition of the meter; (2) the maintenance of the metering system; and (3) the use of adjustments. In making this analysis, it is essential that the only variable that change is the flow rate.

For example, the minimum tests for an LPG metering system equipped with an automatic temperature compensating (ATC) system includes:

- (1) Normal (fast flow) with ATC activated
- (2) Normal (fast flow) with ATC de-activated
- (3) Special (slow flow) with ATC de-activated

The test draft size and other conditions such as temperature and pressure must be as similar as possible for the three tests.

For tests (1) and (2), the flow rate, draft size, and other conditions such as temperature and pressure are the same; the only variable that is the activation/de-activation of the ATC system. Examining the results of the first two tests together allows for an assessment of how the ATC is functioning and whether adjustments to the ATC may have been used to (inappropriately) make adjustments to compensate for meter wear.

For tests (2) and (3), the activation/de-activation of the ATC system, draft size, and other conditions such as temperature and pressure are the same; the only variable is the flow rate. Examining the results of the second and third tests together allows for an assessment of the meter's condition and whether or not adjustments may have been used inappropriately to mask extreme wear in the meter as opposed to bringing the meter as close to zero error as possible.

Thus, if a test conducted at a slower flow rate is of a *different draft size*, as outlined in the proposal, the results of that test cannot be used to make the latter assessment. OWM is concerned that the proposed change to N.3.2. might be misinterpreted by inspectors and service personnel and result in unnecessary additional testing.

3. Using the term "field standards" to replace terms such as "transfer standards," "master meter," and other terms used to describe a standard used to test legal-for-trade devices.

OWM notes items N.3.2. LPG-4 and MFM-2 use the terminology "Field Reference Standard Meter Test." There are other proposals on the Committee's agenda currently addressing the need to review and revise terminology used for standards and test equipment used in the testing of commercial weighing and measuring systems.

In Block 4 of the Committee's report, OWM submitted proposed changes to the following sections of NIST Handbook under the general heading of "Terminology for Testing Standards."

- Scales Code
- Automatic Bulk Weighing Systems Code
- Automatic Weighing Systems Code
- Cryogenic Liquid-Measuring Devices Code
- Carbon Dioxide Liquid-Measuring Devices Code
- Hydrogen Gas-Measuring Devices Code
- Grain Moisture Meters Code,
- Electronic Livestock, Meat, and Poultry Evaluation Systems and/or Devices Code
- Appendix A
- Appendix D

The changes proposed in the Block 4 items are intended to standardize Handbook 44 terminology for standards used in testing commercial weighing and measuring systems. In those items OWM proposes the use of the term "field standard" to describe these standards.

Endress+Hauser Flowtec submitted similar proposals under Block 5 Define "Field Reference Standards" to add a definition for field reference standard and delete the use of transfer standards in the following Handbook 44 codes.

- Cryogenic Liquid-Measuring Devices Code
- Carbon Dioxide Liquid-Measuring Devices Code
- Hydrogen Gas-Measuring Devices Code

To allow for the opportunity to incorporate comments received on its Block 4 items, OWM continues to recommend those items be designated as "Developing" items. OWM expects to make progress on addressing those comments between now and the fall 2018 regional weights and measures association meetings. OWM believes the proposals in Block 5 should also remain developing to help ensure alignment across Handbook 44 and a common understanding of what constitutes a "field standard."

As work progresses on Block 4 and 5 items, we acknowledge there may be a need to define other commonly used terms such as "master meter" in the context of "field standards" to help ensure a consistent understanding of: (1) the terms; and (2) the elements that need to be addressed to establish the traceability of any standard within the requirements laid out in the Fundamental Considerations.

Items LPG-4 and MFM-2 is directly impacted by the discussion on terminology in Blocks 4 and 5, but most importantly they will be impacted by the definitions of what is needed to establish an artifact or system as a "field standard."

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to carry this item forward as developmental recommending it be harmonized with items New 6-15 and New 24-27 as the different terms used in these new items will affect their application. The Committee believes that the terms such as "Transfer Standard", "Testing Standards", "Verification (Testing) Standards", "Field Standards", "Field Reference Standard Meter", "Master Meter", etc. in New 6-15, and New 24-27 need to be defined and possibly standardized prior to further development of this item. The WWMA is also concerned that Handbook 44 is not the appropriate place to specify the type of test equipment necessary for conducting tests.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments from Mrs. Tina Butcher (OWM) on this item and 3307-2 noting that Val Miller will be looking at master meters and considering the development of a NIST HB 105-X which might address master meters. She noted that the issue of "master meters" is very broad and that it is necessary to consider the specific type (technology) of master meter used and the application where it will be used. During its work session, the Committee noted that the Measuring Sector also considered these items and is beginning

work to address the use of one specific type of master meter as a starting point for developing further criteria for use in type evaluation. The Committee also acknowledged that Bob Murnane (Seraphin) provided written comments on this issue (see also the Committee's comments under Item New-6).

The SWMA supports the concept of using "master meters" (and acknowledged that other terms have been and are being proposed) for various metering applications. The SWMA believes there is still confusion over the terminology and that it is difficult to review multiple items related to the same basic issue. The SWMA recommends this item remain developing.

NEWMA – Spring 2018 Annual Meeting: NEWMA heard a comment that this item was redundant and that the code already covered this. There were several comments heard recommending more data and further development of this item further development and more data for this item. NEWMA recommends this item remain developing.

CWMA – Spring 2018 Annual Meeting: No comments were heard on this item. The CWMA recommends the item as a developing item on the NCWM agenda.

Other - Comments received from Seraphin Test Measure Company to all items in Block 4 and Block 5, and stand-alone items LPG-4 and MFM-2, dated 12/28/17 posted on NCWM's web site recommending a developing status be assigned to all items and raising several questions of concern.

LPG -5 N.4.1.2. Repeatability Tests and N.4.2.4. Repeatability Tests for Type Evaluation (Carry-Over Item)

OWM – OWM concurs with the need to make modifications to the measuring codes to clarify the application of repeatability criteria. OWM reiterates its comments provided to the Committee at the 2018 Interim Meeting and previously and has updated some of its technical rationale.

OWM suggests the Committee consider the following alternative proposal:

Move N.4.1.2. Repeatability Tests to follow paragraph N.4.2. Special Tests by renumbering N.4.1.2. to N.4.3. and renumbering current N.4.3. and subsequent paragraphs. Delete the new proposed N.4.2.4. Repeatability Tests for Type Evaluation.

N.4.1.2. N.4.3. Repeatability Tests. – Tests for repeatability should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions where variations in factors such as temperature, pressure, and flow rate are reduced to the extent that they will not affect the results obtained. **Repeatability tests shall be based on the uncompensated volume, e.g.; that is, with the temperature compensator deactivated. Both field tests and type evaluation tests shall be run at flow rates consistent with normal tests as specified in N.4.1.**
(amended 20XX)

Add a new Paragraph N.4.2.4. as follows:

N.4.2.4. Repeatability Tests for Type Evaluation. ~~Tests for repeatability should include a minimum of three consecutive test drafts of approximately the same size and be conducted under controlled conditions where variations in factors such as temperature, pressure, and flow rate are reduced to the extent that they will not affect the results obtained. Repeatability tests shall be based on the uncompensated volume, e.g. with the temperature compensator deactivated. Type evaluation tests shall be run at flow rates consistent with special tests as specified in N.4.2., N.4.2.1., N.4.2.2., or N.4.2.3. as appropriate.~~
(Added 20XX)

OWM's rationale for these proposed changes is outlined below.

Prior to the addition of repeatability tolerances in the measuring codes, only G-S.5.4. applied. When considering the addition of the repeatability requirements to the specific measuring codes, the W&M community felt strongly that a measuring device should be able to repeat its indications within a much smaller limit. Field officials should have the option of verifying a device is capable of repeating its indications at other flow rates and use conditions. Repeatability testing at other than normal flow rates should not be limited to type evaluation.

In reviewing the history of this paragraph, it is not clear whether the decision to include the "Note" under the paragraph addressing "Normal Tests" was intended to limit the application of the repeatability tolerances in the specific codes to only certain types of tests. We found no mention of restricting the tolerances to only normal tests in either the S&T Committee or 2001 Measuring Sector reports when the tolerances were initially added. This raises the question of causes whether the location in the code is appropriate. Conducting repeatability testing at any flow rate at which the device is rated for use seems appropriate and suggests the code needs to be changed to clarify the intent.

During the Committee's work session at the 2017 NCWM Annual Meeting, the NIST Technical Advisor further noted that, initially, OWM had questioned whether the 40 percent of the absolute value of maintenance tolerance was too stringent to apply to the results of "Special Tests." However, during an MMA meeting held in conjunction with that same NCWM meeting, it was noted that "Special Tests" are granted a larger tolerance. Thus, applying the "40 percent" value to the maintenance tolerances applied to special tests would result in applying a larger repeatability tolerance to those tests than would be applied for a "Normal Test." Based on the comments heard and its work session discussions, the Committee agreed to recommend this item be further developed.

OWM offers the following points (most of which have been shared on multiple occasions) for the Committee and submitter to consider in developing any revisions to the proposal:

- OWM supports the principle of the proposed changes, but feels additional changes are needed before moving forward with the proposal.
- OWM concurs that the placement of the repeatability test under N.4.1. Normal Tests indicates the test is to be run at a normal flow rate; however, it is not clear that this limitation was originally intended.
- OWM believes the paragraph should be moved from under the "Normal Test" heading to a separate paragraph to avoid any future confusion and suggests renumbering the paragraph accordingly.
- Systems must be able to provide repeatable measurements under all conditions of use, not just at the normal flow rate. Since the repeatability tolerance is based on the applicable "normal" or "special" test maintenance tolerances, the tolerance structure allows for a larger maintenance tolerance (and, therefore, a larger repeatability tolerance) for special tests for most VTMs. As an additional consideration, tests run at reduced flow rates often reveal problems with meter repeatability that may not be observed at normal flow rates.
- Field officials should not be precluded from conducting a repeatability test at all flow rates within the rated flow range of the meter, provided appropriate tolerances are applied.

There appears to still be some confusion over references to conducting repeatability testing for devices equipped with automatic temperature compensating systems. OWM concurs with technical points raised in discussions during S&T Committee work sessions, Measuring Sector, and Meter Manufacturers Association meetings questioning whether it is appropriate for repeatability tests to be conducted when automatic temperature compensating components are

activated. OWM agrees that repeatability tests should not be conducted when mechanical ATC systems are activated. For systems equipped with electronic ATC, the calculation of the net value is determined based on a mathematical calculation, so the exemption should be unnecessary for those systems. However, it seems unnecessary to examine the net values for repeatability in such cases since they are simply a calculated value.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item continue as developing as work is continuing by the OWM, MMA, and submitter.

SWMA - Fall 2017 Annual Meeting: The Committee heard no comments on this item. During its work session, the Committee noted that the Measuring Sector discussed this item and may have recommendations to make to the submitter. The SWMA acknowledges additional work is needed on the item and recommends the item remain Developing.

NEWMA – Spring 2018 Annual Meeting: The submitter believes this item is fully developed. It received support both as a voting item and as a developing item. NIST recommended that the language be adjusted and offered an alternative proposal. NEWMA recommends this item remain developing at this time to come to a consensus on the location and language of the item.

CWMA – Spring 2018 Annual Meeting: No comments were heard on this item. The CWMA recommends the item as a developing item on the NCWM agenda.

WTR – WATER METERS

WTR-2 S.2.1. Provision for Sealing and Table S.2.1. Categories of Device and Methods of Sealing

OWM – As noted in previous OWM comments and recommendations to this item, adding these additional categories of sealing to the Water Meters Code to permit the metrological parameters of new meters equipped with digital electronic registers to be secured by means other than physical seal seems a reasonable change and would improve harmonization of the sealing requirements in the various metering codes of HB 44. OWM cannot think of anything unique about a water meter that would necessitate different sealing requirements than those already specified in other measuring devices codes in HB 44. Thus, the proposed changes to harmonize sealing requirements in the Water Meters Code with those in other measuring codes seems a sound approach.

In reviewing the proposed changes, however, OWM identified what appears to be conflicting nonretroactive dates in new proposed Table S.2.1. in comparison to the date proposed in the bracketed area beneath paragraph S.2.1. In considering these different dates, OWM concluded that should this item get adopted, because proposed Table S.2.1. is new, no portion of the information contained within the table should be made nonretroactive to a date prior to the date in which the table itself first becomes effective. It is proposed in paragraph S.2.1. that Table S.2.1. is to be nonretroactive as of January 1, 2019. OWM shared these findings with the submitter (State of CA) and the submitter agreed that the nonretroactive dates included in the table should be eliminated and all portions of the Table should be made nonretroactive as of January 1, 2019. Consequently, OWM recommends the following (shaded) changes to this item to resolve this concern:

S.2.1. Provision for Sealing. – Adequate provision shall be made for **an approved means of security (e.g., data change audit trail) or** for **physically** applying a security seals in such a manner that **requires the security seal to be broken before an** ~~no~~ adjustment or interchange can be made of:

- (a) any measuring **or indicating** element; **and**
- (b) any adjustable element for controlling delivery rate when such rate tends to affect the accuracy of deliveries; **and**
- (c) **any metrological parameter that will affect the metrological integrity of the device or system.**

When applicable, the adjusting mechanism shall be readily accessible for purposes of affixing a security seal.

(Amended 20XX)

[Audit trails shall use the format set forth in Table S.2.1.]*

[*Nonretroactive ~~as~~ of January 1, 2019]

<u>Table S.2.1.</u>	
<u>Categories of Device and Methods of Sealing</u>	
<u>Categories of Device</u>	<u>Methods of Sealing</u>
<u>Category 1: No remote configuration capability.</u>	<u>Seal by physical seal or two event counters: one for calibration parameters and one for configuration parameters.</u>
<u>Category 2: Remote configuration capability, but access is controlled by physical hardware.</u> <u>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.</u>	<u>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.†*</u> <u>†*Nonretroactive as of January 1, 1996†</u>
<u>Category 3: Remote configuration capability access may be unlimited or controlled through a software switch (e.g., password).</u> <u>†Nonretroactive as of January 1, 1995†</u> <u>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.</u> <u>†Nonretroactive as of January 1, 2001†</u>	<u>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. 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.)</u>

†Nonretroactive as of January 1, 2019†

(Added 20XX)

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item go forward as a voting item with the following change:

- Add a non-retroactive date that specifies the date in which an audit trail if provided must use the format set forth in Table S.2.1.

SWMA - Fall 2017 Annual Meeting: The Committee heard no comments on this item. The Committee acknowledged that, while there are some dates specified in the proposed table, there is no date specified under paragraph S.2.1. for

the effective date of the table as a whole. The SWMA recommends the proposal for a vote with the recommendation that the NCWM S&T Committee specify an effective date prior to voting at the national level.

NEWMA – Spring 2018 Annual Meeting: No comments were heard. NEWMA believes this item is fully developed and ready for vote.

CWMA – Spring 2018 Annual Meeting: The CWMA recommends the item be presented as a voting item at the upcoming 2018 NCWM Annual Meeting.

MFM – MASS FLOW METERS

MFM-2 N.3. Test Drafts (Carry-Over Item)

OWM – OWM considers this item and LPG-4 related items and provides the same comments and recommendation to both items. Refer to OWM comments and recommendations to LPG-4 for OWM’s analysis of these two items.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item be withdrawn. The requirement in proposed N.3.1 Minimum Test requiring the minimum test shall be one test draft at the maximum flow rate of the installation is not possible for current testing equipment or NIST EPO’s including gravimetric or flow meter testing of CNG retail motor fuel devices.

SWMA - Fall 2017 Annual Meeting: The Committee heard comments on both Items 3302-1 and 3307-2. See Item 3302-1 for additional details.

The SWMA supports the concept of using “master meters” (and acknowledged that other terms have been and are being proposed) for various metering applications. The SWMA believes there is still confusion over the terminology and that it is difficult to review multiple items related to the same basic issue. The SWMA recommends that this item remain Developing.

NEWMA – Spring 2018 Annual Meeting: No comments were heard on this item. The language in this item is still being developed and shares a relationship with Block 4, Block 5 and LPG-4. NEWMA recommends this item remain developing.

CWMA – Spring 2018 Annual Meeting: The CWMA recommends the item as a developing item on the NCWM agenda.

Other - Comments received from Seraphin Test Measure Company to all items in Block 4 and Block 5, and stand-alone items LPG-4 and MFM-2, dated 12/28/17 posted on NCWM’s web site recommending a developing status be assigned to all items and raising several questions of concern.

TXI – TAXIMETERS

TXI-1 S.1.2.2. Distance Mechanism and S.1.5.3. Distance Not Recording.

OWM - OWM recognizes that the effective dates established for the new requirements have been determined by adhering to a customary practice used routinely when nonretroactive requirements are adopted without a specific date

provided at the time the proposed change is voted on by NCWM. That customary practice is to assign an effective date for a new requirement as January 1 of the year following the adoption of the proposal.

Considering that these new requirements would likely create a need for taximeter manufacturers to redesign software and hardware elements in their product line, OWM supports the changes to provide additional time for the necessary changes to be incorporated into new devices. Amending the nonretroactive effective dates from January 1, 2018 to January 1, 2020 would provide taximeter manufacturers an additional two years to incorporate the necessary changes in their new products.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item be carried forward as voting item as it corrects this section of the code to bring it into conformance with the original intent allowing the industry time to comply with the requirements.

SWMA - Fall 2017 Annual Meeting: The SWMA heard comments from Mrs. Tina Butcher (OWM) who provided history of the item. She noted that, when revisions were made to the Taximeters Code in July 2017, there was an oversight in designating a specific non-retroactive date; a date of 20XX was specified in the proposal when it was adopted. The standard approach for addressing a “20XX” date has been to use a date of the subsequent calendar year. Thus, OWM used 2018 as the specified date. However, there were concerns that taximeter manufacturers may have been anticipating a later date. Consequently, OWM polled the USNWG on Taximeters and is proposing a modification to the date as specified in the proposal. No other comments or opposition to the proposed change were heard and the SWMA recommends the item for a vote.

NEWMA – Spring 2018 Annual Meeting: NEWMA heard a comment in support of this item and no comments in opposition. NEWMA recommends this item be presented for vote at the 2018 NCWM Annual Meeting.

CWMA – Spring 2018 Annual Meeting: The CWMA recommends the item be presented for vote at the upcoming 2018 NCWM Annual Meeting.

OTH – OTHER ITEMS

OTH-5 D Electric Watthour Meters Code under Development (Carry-Over Item)

OWM- The Electric Watthour Meter Subgroup of the USNWG on Electric Vehicle Fueling & Submetering has held several in-person meetings since the 2017 NCWM Annual Meeting, including meetings in September 2017, November 2017, and May 2018. All meetings included web-conferencing to allow those not able to attend in person to participate.

The Subgroup has developed a proposed addition to NIST Handbook 130’s Uniform Regulation for the Method of Sale of Commodities to specify a method of sale for electrical energy sold through these systems and recently finalized a Subgroup ballot on language to be presented for consideration by the Regional W&M Associations and the NCWM in the 2019 NCWM cycle. The Subgroup looks forward to comments on the proposed language as it moves through the process. Although, the Subgroup understands there may be a need to make some technical and editorial changes as these comments are received, the Subgroup expects the proposal will be ready for vote by the NCWM at the 2019 Annual Meeting.

The Subgroup is steadily working on a proposed code for NIST Handbook 44 to address specifications, tolerances, and other requirements for metering systems. The Subgroup expects to have a draft Handbook 44 code ready for the 2020 NCWM cycle. The Subgroup will meet for a short web-conference on August 29 and is planning its next in-person meeting for February 2019 in Sacramento, CA.

Those interested in participating in this work are asked to contact Subgroup Chairman, Ms. Lisa Warfield, (OWM) by email (lisa.warfield@nist.gov) or phone (301-975-3308), or Technical Advisor, Mrs. Tina Butcher, (OWM) by email (tbutcher@nist.gov) or phone (301-975-2196).

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agreed to recommend this item be forwarded to the national committee as a developing item as there is continuing work by the US National Work Group.

SWMA - Fall 2017 Annual Meeting: The SWMA heard an update on this issue from Mrs. Tina Butcher, (OWM), submitter of this item. Mrs. Butcher reported the USNWG on Electric Vehicle Refueling and Submetering has begun work on development of a draft NIST Handbook 44 code for utility type electric watt-hour meters used in submetering applications. She indicated the group held a face-to-face meeting in Sacramento, CA in mid-September and has made good progress on the draft code. The group plans another short meeting in November followed by another, longer meeting in early Spring. The group hopes to finish review and revision of the code and submit a final draft for review by the regions in fall 2018. OWM will continue to provide updates on the Work Group's progress and encourages anyone interested in participating in the work (as an active member or observer) to contact Work Group Chairman, Lisa Warfield (lisa.warfield@nist.gov) or Technical Advisor, Tina Butcher (tina.butcher@nist.gov).

NEWMA – Spring 2018 Annual Meeting: The committee heard a comment from NIST that this item is still being worked on and developed by the Electric watt-hour Meter Subgroup of the USNWG on Electric Vehicle Fueling & submetering. NEWMA recommends this item remain developing.

CWMA – Spring 2018 Annual Meeting: Lisa Warfield (OWM) provided an update on a watt-hour method of sale which will be made available Fall 2018. The CWMA recommends the item as a developing item on the NCWM agenda.

OTH-6 Appendix D – Definitions: Batch (Batching)

OWM- As noted in OWM's comments and recommendations for ABW-3 and ABW-4, the changes proposed in ABW-3, ABW-4, and OTH-6 are all related attempts to help clarify and make it easier for field officials to determine the proper HB 44 code to apply to some newer automatic weighing systems that have been introduced into the commercial arena. OWM is unable to envision, based upon its review of these three proposals, how the proposals, whether considered individually, or combined and considered as a group, will accomplish this intended outcome. Addressing these issues in a piecemeal fashion may actually result in more confusion.

OWM notes that the submitter of this particular item had requested it be withdrawn during the 2018 spring Annual Meeting of the CWMA.

OWM also notes that this item proposes a definition for "batch" or "batching" and that these terms are very similar to the terminology ("batching system") addressed in another proposal in this agenda (ABW-4). We also note that the proposed definition in this proposal would be in conflict with the definition being proposed in ABW-4; in that the definition in this proposal would include the use of ABWS in batching operations where the definition offered under item ABW-4 would exclude the use of ABWS in batching operations.

The definition provided in this proposal is limited in its scope by specifying that the weighments or measurements are made consecutively in the same weighing/measuring element and that the indications do not return to zero between draft weighments/measurements. OWM believes that by identifying these explicit features of a batching system, other types of systems that differ in functionality are inappropriately excluded in the definition.

OWM questions the notion that this definition will provide a resolution to problems involving consistency in evaluation procedures and we believe the narrow scope of the definition does not encompass all types of systems that are capable of performing batching operations.

Regional Association Recommendations and Comments:

WWMA - Fall 2017 Annual Meeting: The WWMA agrees to recommend that this item be withdrawn as it does not feel that this term needs to be defined based on its current use in Handbook 44. In addition, this definition identifies only one type of batching operation when there are many different uses of the term “batch (batching)” currently in use.

SWMA - Fall 2017 Annual Meeting: The SWMA heard comments from Richard Suiter (Richard Suiter Consulting) who opposed the proposal, noting that the definition conflicts with many systems that are currently in the field. The definition only refers to one type of system. The SWMA heard no other comments on the item. Given the comments received in opposition to the proposal and the other items addressing batching systems, the SWMA recommends the item be withdrawn

NEWMA – Spring 2018 Annual Meeting: The committee heard a comment from the SMA opposing this item due to batching items not being commercial devices which meant they should not be included in HB 44. NEWMA heard no comments in support of this item and recommends withdrawal.

CWMA – Spring 2018 Annual Meeting: The submitter offered no new information. The CWMA recommends the item as a developing item on the NCWM agenda.

SMA - Spring 2018 Meeting: The SMA opposes this item. Batching systems are not commercial devices and therefore should not be included in Handbook 44.