# Specifications and Tolerances (S&T) Committee 2021 Interim Meeting Report Addendum Sheet

Mr. Josh Nelson, Committee Chair Oregon

#### INTRODUCTION

The S&T Committee submits its Committee Interim Report for consideration by National Conference on Weights and Measures (NCWM). This addendum sheet contains the report items published in *NCWM Publication 16: Committee Reports for the 106<sup>th</sup> Annual Meeting*. The addendum sheet will address the following items during the Annual Meeting.

Items are grouped according to item status:

- (VC) Voting Consent Calendar: The Committee has grouped these items for a single vote.
- (V) Voting Item: The Committee is making recommendations requiring a vote by the active members of NCWM.
- (I) Informational Item: The item is under consideration by the Committee but, not proposed for Voting.
- (A) Assigned Item: The Committee assigned development of the item to a recognized subcommittee or task group.
- **(D) Developing Item:** The Committee determined the item has merit; however, the item was returned to the submitter or other designated party for further development before any action can be taken at the national level.
- (W) Withdrawn Item: The item has been removed from consideration by the Committee.

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EVF-21.4	VC S.3.3. Provision for Sealing	14
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OTH-21.1	VC Appendix A – 2.1. Acceptance and Maintenance Tolerances	15

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SCL-17.1	V S.1.8.5. Recorded Representations, Point of Sale Systems	8
SCL-20.12	V Sections Throughout the Code to Include Provisions for Commercial Single Draft Weigh-in-Motion Vehicle Scales	
VTM – VEHICLE	TANK METERS	12
VTM-20.2	V Table T.2. Tolerances for Vehicle Mounted Milk Meters.	12

#### **Developing Item(s)** Title of Item Addendum S&T Page Reference Key .....8 SCL - SCALES D S.1.1.3. Zero Indication, Load Receiving Elements Separate from Weighing Elements. SCL-20.9 and Appendix D – Definitions: no load reference value ......8 ELECTRONICALLY CAPTURED TICKETS OR RECEIPTS ......9 **BLOCK 4 ITEMS (B4)** B4: LMD-21.2 D S.1.6.5. Money Value Computations., UR.3. Use of a Device......9 B4: LPG-21.1 B4: CLM-21.1 D S.1.4.1. Printed Ticket Recorded Representation., UR.2.6.3. Printed Ticket Recorded Representation......9 B4: MLK-XX.XD S.1.4.2. Printed Ticket Recorded Representation., UR.2.6.3. Printed Ticket Recorded S.6. PrinterRecorded Representations., UR.2.6. Ticket Printer, Customer Ticket, B4: MFM-21.2 D B4: CDL-21.1 D S.1.4.1. Printed Ticket Recorded Representations., UR.2.4.2. Tickets or Invoices. Recorded Representation......9 B4: HGM-21.1 D S.2.6. Recorded Representations, Point of Sale Systems., S.6. Printer, Recording Element., UR.3.2. Vehicle-mounted Measuring Systems Ticket Printer Recording BLOCK 1 ITEMS (B1) TERMINOLOGY FOR TESTING STANDARDS (VERIFICATION STANDARDS, FIELD STANDARDS, TRANSFER STANDARDS, FIELD REFERENCE STANDARDS, ETC.,) TOLERANCES ON TESTS WHEN TRANSFER STANDARDS ARE USED, MINIMUM QUANTITY FOR FIELD REFERENCE B1: GEN-19.1 D G-T.5. Tolerances on Tests When Transfer Standards are Used., Appendix D – B1: SCL-18.1 B1: AWS-18.1 D N.1.3. Verification (Testing) Standards, N.3.1. Official Tests, UR.4. Testing Standards .... 11 B1: CLM-18.1 D N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards.......11 B1: CDL-18.1 D N.3.2. Transfer Standard Test, T.3. On Tests Using Transfer Standards .......11 B1: HGM-18.1 D N.4.1. Master Meter (Transfer) Standard Test, T.4. Tolerance Application on Test B1: GMM-18.1 D 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. Tolerances<sup>1</sup> 11 B1: LVS-18.1 B1: OTH-18.1 D Appendix A: Fundamental Considerations, 3.2. Tolerances for Standards, 3.3. B1: OTH-18.2 D Appendix D – Definitions: fifth-wheel, official grain samples, transfer standard and B1: HGM-18.2 D N.4.1. Master Meter (Transfer) Standard Test and T.4. Tolerance Application on Test

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VTM – VEHICLE	TANK METERS	12
VTM-18.1	D S.3.1 Diversion of Measured Liquid and S.3.1.1. Means for Clearing the Discharge Hose and UR.2.6. Clearing the Discharge on a multiple-product, single discharge hose.	12
EVF – ELECTRIC	VEHICLE FUELING SYSTEMS	13
EVF-21.1 EVF-20.1 EVF-21.5	D A.1. General	13
GMA – GRAIN M	OISTURE METERS 5.56 (A)	14
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#### **Informational Item(s)** Title of Item Addendum S&T Page Reference Key DEFINE TRUE VALUE FOR USE IN ERROR CALCULATIONS......7 **BLOCK 2 ITEMS (B2)** B2: SCL-20.3 I S.5.4. Relationship of Minimum Load Cell Verification Interval to the Scale Division .......7 B2: SCL-20.4 B2: SCL-20.5 B2: SCL-20.6 B2: SCL-20.7 I B2: SCL-20.8 I

# Withdrawn Item(s)

Reference Key	Title of Item Addendum S&T	<b>Page</b>
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SCL – SCALES		8
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	TIC BULK WEIGHING SYSTEMS	
ABW-16.1	W A. Application, S Specifications, N. Notes, UR. User Requirements and Appendix D – Definitions: automatic bulk weighing system.	-
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B5: LMD-20.1	W Table S.2.2. Categories of Device and Methods of Sealing.	12
VTM – VEHICLE	TANK METERS	12
VTM-20.1	W S.3.1. Diversion of Measured Liquid.	12
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#### **Details of All Items**

(In order by Reference Key)

#### **GEN – GENERAL CODE**

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

GEN-20.1		
Comments:		
No changes.		

#### **GEN-21.1** W Use-for-Fee Vehicle and Axle-Load Scales

GEN-21.1		
Comments:		
No changes.		

# BLOCK 2 ITEMS (B2) DEFINE TRUE VALUE FOR USE IN ERROR CALCULATIONS

- B2: SCL-20.3 I S.5.4. Relationship of Minimum Load Cell Verification Interval to the Scale Division
- B2: SCL-20.4 I Table 3. Parameters of Accuracy Classes.
- B2: SCL-20.5 I Table S.6.3.a. Marking Requirements, Note 3.
- B2: SCL-20.6 I T.N.1.2. Accuracy Classes and T.N.1.3. Scale Division.
- **B2: SCL-20.7 I Table 7. Maintenance Tolerances**

#### B2: SCL-20.8 I Table 8. Recommended Minimum Load

#### **BLOCK 2 ITEMS**

**Comments:** The Committee heard an update from the Task Group Chair and received an updated report with recommendations. The Task Group Chair also requested the Block be listed as an Informational item in order to receive comments from the regions. The Committee has agreed to change the status from Assigned to Informational.

#### SCL - SCALES

# SCL-16.1 W Sections Throughout the Code to Include Provisions for Commercial Weigh-in-Motion Vehicle Scale Systems

	SCL-16.1	
Comments:		
No changes.		

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

#### SCL-17.1

**Comments:** The submitter provided a presentation on this item during open hearings. The submitter also requested the non-retroactive date be changed to 2025 to give a full three years from the date of adoption. We heard more comments from the floor in support of the item than in opposition. Only the following language is being changed in the proposal:

Item as proposed:

Non-retroactive as of January 1, 2024

Change requested:

Non-retroactive as of January 1, 2024 2025

#### SCL-21.1 W S.1.1. Zero Indication

	SCL-21.1
Comments:	
No changes.	

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

SCL-20.9	
Comments:	
No changes.	

SCL-20.12 V Sections Throughout the Code to Include Provisions for Commercial Single Draft Weigh-in-Motion Vehicle Scales.

#### SCL-20.12

**Comments:** Submitter gave overview of the item. The committee heard comments in support of the item, however, a regulatory official expressed concern due to not having tested this type of device yet.

No changes.

#### ABW – AUTOMATIC BULK WEIGHING SYSTEMS

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

ABW-16.1	
Comments:	
No changes.	

# BLOCK 4 ITEMS (B4) ELECTRONICALLY CAPTURED TICKETS OR RECEIPTS

- B4: GEN-21.2 D G-S.5.6. Recorded Representations.
- B4: LMD-21.2 D S.1.6.5. Money Value Computations., UR.3. Use of a Device.
- B4: VTM-21.1 D S.1.1. Primary Elements., UR.2. User Requirements
- B4: LPG-21.1 D S.1.1. Primary Elements., UR.2. User Requirements
- B4: CLM-21.1 D S.1.4.1. Printed Ticket Recorded Representation., UR.2.6.3. Printed Ticket Recorded Representation.
- B4: MLK-XX.X D S.1.4.2. Printed Ticket Recorded Representation., UR.2.6.3. Printed Ticket Recorded Representation.
- B4: MFM-21.2 D S.6. Printer Recorded Representations., UR.2.6. Ticket Printer, Customer Ticket, Recorded Representation., UR.3.4. Printed Ticket. Recorded Representation.
- B4: CDL-21.1 D S.1.4.1. Printed Ticket Recorded Representations., UR.2.4.2. Tickets or Invoices. Recorded Representation.

B4: HGM-21.1 D S.2.6. Recorded Representations, Point of Sale Systems., S.6. Printer.
Recording Element., UR.3.2. Vehicle-mounted Measuring Systems Ticket
Printer Recording Element., UR.3.3. Printed Ticket. Recorded
Representation.

B4: OTH-21.2 D Appendix D - Definitions.: recorded representations, recording element.

B4: LMD-21.2 S.1.6.5. Money Value Computations., UR.3. Use of a Device.

B4: VTM-21.1 S.1.1. Primary Elements., UR.2. User Requirements

B4: LPG-21.1 S.1.1. Primary Elements., UR.2. User Requirements

B4: CLM-21.1 S.1.4.1. Printed Ticket Recorded Representation., UR.2.6.3. Printed Ticket Recorded Representation.

B4: MFM-21.2 S.6. <u>Printer Recorded Representations.</u>, UR.2.6. <u>Ticket Printer, Customer Ticket, Recorded Representation.</u>, UR.3.4. <u>Printed Ticket. Recorded Representation.</u>

B4: CDL-21.1 S.1.4.1. Printed TicketRecorded Representations., UR.2.4.2. Tickets or Invoices. Recorded Representation.

B4: HGM-21.1 S.2.6. Recorded Representations, Point of Sale Systems., S.6. Printer. Recording Element., UR.3.2. Vehicle-mounted Measuring Systems Ticket Printer Recording Element., UR.3.3. Printed Ticket. Recorded Representation.

B4: OTH-21.2 Appendix D - Definitions.: recorded representations, recording element.

BLOCK 4 ITEMS		
Comments:		
No changes.		

BLOCK 1 ITEMS (B1) TERMINOLOGY FOR TESTING STANDARDS
(VERIFICATION STANDARDS, FIELD STANDARDS,
TRANSFER STANDARDS, FIELD REFERENCE STANDARDS,
ETC.,) TOLERANCES ON TESTS WHEN TRANSFER
STANDARDS ARE USED, MINIMUM QUANTITY FOR FIELD
REFERENCE STANDARD METER TESTS

B1: GEN-19.1 D G-T.5. Tolerances on Tests When Transfer Standards are Used., Appendix D – Definitions: <u>standards</u>, <u>field.</u>, <u>transfer standard.</u> and <u>standard, transfer.</u>

- BLOCK 1 ITEMS (B1) D TERMINOLOGY FOR TESTING STANDARDS (original B1 items)
- B1: SCL-18.1 D N.2. Verification (Testing) Standards
- B1: ABW-18.1 D N.2. Verification (Testing) Standards
- B1: AWS-18.1 D N.1.3. Verification (Testing) Standards, N.3.1. Official Tests, UR.4. Testing Standards
- B1: CLM-18.1 D N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards
- B1: CDL-18.1 D N.3.2. Transfer Standard Test, T.3. On Tests Using Transfer Standards
- B1: HGM-18.1 D N.4.1. Master Meter (Transfer) Standard Test, T.4. Tolerance Application on Test Using Transfer Standard Test Method
- B1: GMM-18.1D 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. Tolerances<sup>1</sup>
- B1: LVS-18.1 D N.2. Testing Standards
- B1: OTH-18.1 D Appendix A: Fundamental Considerations, 3.2. Tolerances for Standards, 3.3. Accuracy of Standards
- B1: OTH-18.2 D Appendix D Definitions: fifth-wheel, official grain samples, transfer standard and Standard, Field
- B1: CLM-18.2 D N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards
- B1: CDL-18.2 D N.3.2. Transfer Standard Test and T.3. On Tests Using Transfer Standards
- B1: HGM-18.2 D N.4.1. Master Meter (Transfer) Standard Test and T.4. Tolerance Application on Test Using Transfer Standard Test Method
- B1: OTH-18.3 D Appendix D Definitions: field reference standard meter-and transfer standard
- B1: LPG-15.1 D N.3. Test Drafts.
- B1: MFM-15.1 D N.3. Test Drafts.

#### **BLOCK 1 ITEMS**

**Comments:** The Committee heard updates from members of the Task Group during open hearings. The Committee recognizes that the Task Group has accomplished all it is able to at this point and is recommending the Task Group be disbanded and will make said recommendation to the NCWM Chairman. The Committee agreed to break all items in Block 1 into individual items and designate them all as Developing. The Committee thanks the Task Group and its members for their work.

## BLOCK 5 ITEMS (B5) CATEGORY 3 METHODS OF SEALING

B5: LMD-20.1 W Table S.2.2. Categories of Device and Methods of Sealing.

B5: LMD-21.1 D Table S.2.2. Categories of Device and Method of Sealing

BLOCK 5 ITEMS		
Comments:		
No changes.		

#### VTM – VEHICLE TANK METERS

VTM-18.1 D S.3.1 Diversion of Measured Liquid and S.3.1.1. Means for Clearing the Discharge Hose and UR.2.6. Clearing the Discharge on a multiple-product, single discharge hose.

	VTM-18.1	
Comments:		
No changes.		

#### VTM-20.1 W S.3.1. Diversion of Measured Liquid.

	VTM-20.1	
Comments:		
No changes.		

#### VTM-20.2 V Table T.2. Tolerances for Vehicle Mounted Milk Meters.

#### VTM-20.2

Comments: During the open hearings, the Task Group gave an overview of the proposed item and noted that members of the Task Group had witnessed the meters and metering systems being used in the field just prior to the Conference. Comments were heard from the floor in support of this item.

No changes.

#### MFM - MASS FLOW METERS

#### MFM-21.1 W UR.3.3. Ticket Printer: Customer Ticket

	MFM-21.1	
Comments:		
No changes.		

### **EVF - ELECTRIC VEHICLE FUELING SYSTEMS**

#### EVF-21.1 D A.1. General

	EVF-21.1	
Comments:		
No changes.		

#### EVF-21.2 W A.2. Exceptions

	EVF-21.2	
Comments:		
No changes.		

#### EVF-20.1 D S.1.3.2. EVSE Value of the Smallest Unit.

	EVF-20.1	
Comments:		
No changes.		

# **EVF-20.2 VC Definitions: Submeter**

### **EVF-20.2**

**Comments:** The committee heard comments in support of this item, however, concern was expressed by regulators regarding the lack of clarification of the term "master meter". A language change was proposed by a technical advisor of the submitter to include the word "electric". The commenter agreed with the language change. Only the following language is being changed in the proposal:

Item as proposed:

**submeter.** – A <u>meter or meter</u> system <u>downstream of</u> the <del>furnished, owned, installed, and maintained by the customer who is served through a utility owned</del> master meter. [3.40]

Proposed language change:

**submeter.** – A <u>meter or meter</u> system <u>downstream of</u> the <del>furnished, owned, installed, and maintained by the customer who is served through a utility owned <u>electric</u> master meter. [3.40]</del>

# EVF-21.3 W S.1.2. EVSE Indicating Elements, S.2.4.1. Unit Price, S.2.5. EVSE Money-Value Computations., S.2.7. Indication of Delivery

	EVF-21.3	
Comments:		
No changes.		

#### **EVF-21.4** VC S.3.3. Provision for Sealing

EVF-21.4
<b>Comments:</b> The Committee only heard comments in support of this item.
No changes.

#### EVF-21.5 D T.2. Load Test Tolerances.

	EVF-21.5	
Comments:		
No changes.		

# **EVF-21.6 VC Definitions: minimum measured quantity (MMQ)**

EVF-21.6
<b>Comments:</b> The Committee only heard comments in support of this item.
No changes.

# TXI – TAXIMETERS

See Block 3 Items: Tolerances for Distance Testing.

# GMA – GRAIN MOISTURE METERS 5.56 (A)

# GMA-19.1 D Table T.2.1. Acceptance and Maintenance Tolerances Air Oven Method <u>for All</u> Grains and Oil Seeds.

	GMA-19.1	
Comments:		
No changes.		

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

#### **B3: TXI-20.1 D T. Tolerances**

#### **B3: TNS-20.1 D T. Tolerances**

	BLOCK 3 ITEMS	
Comments:		
No changes.		

#### **OTH – OTHER ITEMS**

## OTH-16.1 D Electric Watthour Meters Code under Development

	OTH-16.1	
Comments:		
No changes.		

# **OTH-21.1 VC Appendix A – 2.1. Acceptance and Maintenance Tolerances.**

#### OTH-21.1

**Comments:** The Committee heard support for the item with a language change that was proposed by the Scale Manufacturers Association. The rationale behind the proposed language change is to make this section consistent with G-T.1, Acceptance Tolerances. Only the following language is being changed in the proposal:

Item as proposed:

Acceptance tolerances are applied to new or newly reconditioned or adjusted equipment, equipment returned to service following official rejection, or equipment undergoing NTEP evaluation, and...

Proposed language change:

Acceptance tolerances are applied to new or newly reconditioned or adjusted equipment, equipment returned to service following official rejection for failure to conform to performance requirements, or equipment undergoing NTEP evaluation, and...

ON BEHALF OF JOSH NELSON, STTCHATR.

Mr. Josh Nelson, Oregon | Committee Chair

Mr. Brad Bachelder, Maine | Member

Mr. Jason Glass, Kentucky | Member

Mr. Nick Owens, Stark County, Ohio | Member

Mr. Jason Flint, New Jersey | Member

Mr. Louis Martinet, Measurement Canada | Canadian Technical Advisor

Mr. John Barton, NIST, OWM | NIST Technical Advisor

Ms. G. Diane Lee, NIST, OWM | NIST Technical Advisor

Mr. Allen Katalinic, NCWM | NTEP Technical Advisor

Mr. Mike Manheim, NCWM | NTEP Technical Advisor

#### **Specifications and Tolerances Committee**