

**95th Annual Meeting of the
 National Conference on Weights and Measures**

**July 11 – 15, 2010
 St. Paul, Minnesota**

**Specifications and Tolerances Committee
 Interim Report**

Reference
 Key Number

300 INTRODUCTION

The Specifications and Tolerances (S&T) Committee (hereinafter referred to as “Committee”) submits its Interim Report to the National Conference on Weights and Measures (NCWM). The Report consists of the Interim Report offered in Publication 16, “NCWM Committee Reports,” and this Addendum. Page numbers in the tables below refer to pages in Publication 16.

Presented below is a list of voting and information items. Voting items are indicated by the letter **V**, if the voting item is part of the Consent calendar, by the letter **VC**. If the item is an Information item, it is indicated by the letter **I**, if the item is Withdrawn, it is indicated by the letter **W**. Items marked with a **D** after the key numbers are Developing items. The developing designation indicates an item has merit; however, the item is returned to the submitter for further development before any action at the national level. The Committee’s Final Report is proposed to be grouped in the following order.

Consent Calendar Items		
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Voting Items

Separate vote (V) of the NCWM is being requested on the following items:

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Withdrawn Items

The following items were withdrawn (W) and require no formal action of the NCWM:

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324 AUTOMATIC WEIGHING SYSTEMS		34
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Information and Developing Items

The following items are informational (I) or under development (D) and require no formal action of the NCWM:

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Details of All Items
(In Order by Reference Key Number)

Recommendations from the CWMA, NEWMA, and other correspondence received by the Committee and referenced in the open hearings will be included or summarized in the Committee's Final Report.

310 GENERAL CODE

310-1 I G-S.8. Provision for Sealing Electronic Adjustable Components, G-S.8.1. Adjustment Mode Indication, and Definitions for Adjustment and Adjustment Mode

Add the following to the Committee's Report:

During the open hearing, Darrell Flocken, speaking as chairman of the NTETC Weighing Sector, stated that the sector concluded that existing language in HB 44 is sufficient and that the sector has established a small work group to review existing type evaluation criteria to suggest procedures in Publications 14 to verify that devices are designed with effective means to ensure compliance with HB 44.

The SMA stated that it opposes this item and recommends that this item be withdrawn. The SMA believes that the current wording is a step back from previous proposals. The SMA continues to support the recommendation from the 2009 Weighing and Measuring Sectors stating that no change to HB 44 is required as the wording of G-S.2 and G-S.8 is sufficient.

WMD suggested that the Committee consider that withdrawing the item might be appropriate. In its comments to the Conference in 2008, WMD stated that its interpretation of G-S.8. and S.1.11. Provision for Sealing, in the Scales Code, clearly does not allow a device to be "sealed" in a mode that allows a change that detrimentally affects the metrological integrity of the device without breaking that "seal." WMD suggested that the Publication 14 procedures for evaluating the method of sealing in the checklist for electronic scales be amended to more closely align it with the procedures in the liquid-measuring devices checklist section 9 which states:

"Measuring elements shall be designed with adequate provisions to prevent changes from being made to the measuring element or the flow rate control (if the flow rate control affects the accuracy of deliveries) without evidence of the change being made. These provisions can be an approved means of security (e.g., data change audit trail) or physically applying a security seal which must be broken before adjustments can be made. When applicable, the adjusting mechanism shall be readily accessible for the purposes of affixing a security seal."

The Committee agreed that the current language in paragraph G-S.8. requires that a security seal be broken before a metrological change can be made to a device (or other approved means of security is provided such as an audit trail). Thus, once a security seal is applied, for example, it should not be possible to make a metrological change to the device without breaking that seal. Since this philosophy addresses provisions for protecting access to metrological adjustment, the philosophy should be applied consistently to all device types.

The Committee is concerned about a device which could be sealed in a "mode" that would allow access to calibration or configuration changes without breaking a seal. Since the NTEP tests and procedures are based on interpretations of HB 44, the Committee supports the efforts of the Weighing Sector and is recommending that this item remain informational until Publication 14 type evaluation procedures to verify compliance with G-S.8. provisions for sealing are consistent with the Committee's interpretation of G-S.8. stated in the previous paragraph.

310-2 W Appendix D – Definition of Electronic Devices, Software-Based and Built-For-Purpose Device

Add the following to the Committee's Report:

During the open hearing, the SMA stated that it opposes this item. There is no longer a technological basis for making this distinction in device types. The SMA supports the recommendation from the March 2010 Software Sector meeting to withdraw this item.

310-3 I G-S.1. Identification. – (Software)

Add the following the Committee's Report:

During the open hearing, the SMA stated that the proposal from the Software Sector addresses one of the SMA concerns dealing with the use of the term "not built for purpose," however, it still has concerns with the requirement in G-S.1 stating that the software version or revision identifier must be clearly and permanently marked.

The SMA recommends that the Software Sector and the S&T Committee review and correct what appears to be conflicting requirements as stated in G-S.1 and G-S.1.1 dealing with the marking requirement.

The Committee agreed to amend the item under consideration based on the recommendations of the March 2010 meeting of the software sector. The Committee will also clarify and document the SMA concerns with the requirements in G-S.1. and G-S.1.1. This item under consideration will be revised and included in the 2010 NCWM Final Report and the 2010 NCWM Interim Agenda.

The SMA recommends that the Software Sector and the S&T Committee review and correct what appears to be conflicting requirements as stated is G-S.1 and G-S.1.1 dealing with the marking requirement.

310-4 I G-A.6. Nonretroactive Requirements (Remanufactured Equipment)

Add the following to the Committee's Report:

The Committee received several comments from remanufacturers requesting the item be made informational to give the device remanufacturers additional time to evaluate the impact of the proposed amendment to G-A.6. Ross Andersen (NY) stated that one of the primary issues that led to the marking requirements was due to the original manufacturers concern over warranty and liability concerns when devices were remanufactured with unauthorized parts and remanufacturers. Paul Lewis (Rice Lake Weighing) expressed concern about a remanufacturer's ability to remanufacture a device without the original manufactures's blueprints and parts lists. Additionally, Mr. Lewis stated that VCAP should also be applicable to remanufacturers that work on devices subject to testing for influence factors.

There is a lot of misunderstanding of the original findings and recommendations of the original task force.

The Committee requested that the NIST Technical Advisor contact the NTEP Administrator to discuss the impact of VCAP on remanufacturers.

The SMA supported this item.

WMD stated that the current issue was proposed because paragraph G-A.6. does not specifically reference "remanufactured" devices and elements. Questions have been raised on how or if nonretroactive requirements are to be applied to "remanufactured" devices and elements.

According to the definition for "remanufactured devices" in Appendix D, remanufactured devices would be subject to nonretroactive requirements.

Significant points for the Conference to consider are:

- If this was not the intent of the NCWM in adopting the definitions and marking requirements for "remanufactured" devices and elements, then how should G-S.1.2. be applied since the "remanufactured" marking requirement in G-S.1.2. was adopted as a nonretroactive requirements?
- The terms manufactured and remanufactured have distinct definitions in that manufactured devices are shipped as new and remanufactured devices are made to operate as new as defined in Appendix D.

- Paragraph G-A.6. is currently silent with respect to remanufactured devices and elements.

320 SCALES

320-1A W S.2.3.4. through S.2.3.7. Value of Tare Indication and Recorded Representations, and Appendix D. Definitions for Gross Weight Value, Net Weight Value, Net Weight, Tare, and Tare Weight Value

No Change.

320-1B W S.2.4. Preset Tare Mechanism and Appendix D – Definitions for Preset Tare

No Change.

320-2 VC S.2.1.1. General (Zero) and Appendix D Definitions for Automatic Zero Setting Mechanism and Automatic Zero-Tracking Mechanism

Add the following to the Committee’s Report:

The Committee agreed to amend the item under consideration to the NEWMA editorial suggestion in S.2.1.1. to read as follows:

S.2.1. Zero-Load Adjustment.

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

Except for an Initial Zero-Setting Mechanism, an automatic zero adjustment outside the limits specified in S.2.1.3. for an automatic zero-tracking mechanism is prohibited.
(Amended 2010)

Amend the Appendix D definition of automatic zero-tracking mechanism by incorporating the SMA suggestions to retain the word “automatic” and amend the definition as follows:

automatic zero-tracking (AZT) mechanism. Automatic means provided to maintain the zero balance indication, within specified limits, without the intervention of an operator. ~~See “automatic zero-tracking mechanism” under “zero-setting mechanism.”~~ [2.20, 2.22, 2.24]
(Amended 2010)

zero setting mechanism - Means provided to attain a zero balance indication with no load on the load-receiving element. Three types of these mechanisms are: [2.20]

~~**automatic zero-tracking mechanism.** Automatic means provided to maintain the zero balance indication, within certain limits, without the intervention of an operator. [2.20, 2.22, 2.24]~~

initial zero-setting mechanism. Automatic means provided to set the indication to zero at the time the instrument is switched on and before it is ready for use. [2.20]
(Added 1990)

manual zero-setting mechanism. Nonautomatic means provided to attain a zero balance indication by the direct operation of a control. [2.20]

semiautomatic zero-setting mechanism. Automatic means provided to attain a direct zero balance indication requiring a single initiation by an operator. [2.20]

(Amended 2010)

Add the following to the discussion:

The SMA supports the intent of prohibiting the use of an automatic zero-setting mechanism and proposes that the current recommendation in S.2.1.1. and definition of automatic zero setting mechanism be replaced with the following.

S.2.1.1. General. – A scale shall be equipped with means by which the zero-load balance may be adjusted. **Automatic zero adjustment outside the limits of automatic zero-tracking (S.2.1.3) (sometimes referred to as automatic zero setting) is prohibited.** Any loose material used for this purpose shall be enclosed so that it cannot shift in position and alter the balance condition of the scale.
(Amended 201X)

automatic zero-setting mechanism. Automatic means provided to set the zero-balance indication without the intervention of the operator.

SMA opposes the removal of the word “automatic” in the term “automatic zero-tracking mechanism.” We believe the removal will lead to confusion in other locations in Handbook 44 and existing inspector training material.

WMD believes that the language in the “item under consideration,” as well as the SMA and NEWMA alternate language satisfies the intent of the proposal. WMD suggests that the Committee consider SMA suggested language for S.2.1.1. since the term automatic zero-setting mechanism (AZSM) was changed to AZT in 2007. WMD believes that many officials still use the AZSM when they mean AZT.

Additionally, WMD has received questions regarding the differences between automatic zero-tracking (AZT) and automatic zero-setting mechanism (AZSM). WMD agrees that the AZT is similar to, but not the same as the AZSM. The differences in applying the AZT requirements include:

- AZT may operate continuously to a maximum limit of correction (i.e., 0.5d, or 3d) to prevent interaction with the normal weighing process; and
- AZSM is activated by an event without limits (e.g., scale capacity) without the intervention of an operator, such as part of every automatic weighing cycle (AWS code, automatic bulk-weighing systems or after a programmed time interval).

320-3 VC T.N.4.5.1. Time Dependence: Class II, III, and IIII, T.N.4.5.2. Time Dependence: Class III L, and T.N.4.5.3. Zero Load Return: Non-automatic Weighing Instruments

Add the following to the Committee’s Report:

The Committee agreed with the proposed language in T.N.4.5.1. and T.N.4.5.2. as they appear in Publication 16 and the SMA recommendations to delete the reference to Class I scales paragraph T.N.4.5.3. to read as follows:

T.N.4.5.3. Zero Load Return: Non-automatic Weighing Instruments. – A non-automatic weighing instrument shall meet the following requirements at constant test conditions. During type evaluation, this test shall be conducted at 20 °C ± 2 °C (68 °F ± 4 °F). The deviation on returning to zero as soon as the indication has stabilized, after the removal of any load which has remained on the instrument for 30 minutes shall not exceed:

(a) 0.5 e for Class II and IIII devices,

(b) 0.5 e for Class III devices with 4000 or fewer divisions,

(c) 0.83 e for Class III devices with more than 4000 divisions, or

(d) one-half of the absolute value of the applicable tolerance for the applied load for Class III L devices.

For a multi-interval instrument, the deviation shall not exceed 0.83 e₁ (where e₁ is the interval of the first partial weighing range or segment of the scale).

On a multiple range instrument, the deviation on returning to zero from Max₁ (load in the applicable weighing range) shall not exceed 0.83 e₁ (interval of the weighing segment). Furthermore, after returning to zero from any load greater than Max₁ (capacity of the first weighing range) and immediately after switching to the lowest weighing range, the indication near zero shall not vary by more than e₁ (interval of the first weighing range) during the following 5 minutes. (Added 2010)

320-4 VC UR.2.6. Approaches

Add the following to the Discussion in the Committee's Report:

The SMA supports this item.

WMD acknowledges the CWMA concerns with the existing language in HB 44 UR.2.6. with the phrase "similar durable material" as being subjective. WMD noted that the subject of "similar durable material" has already been addressed in a W&M newsletter article that stated:

WMD believes that the language in UR.2.6.1.(c) was adopted to include asphalt as a "similar durable material" as long as that portion of the approach remains smooth and level and in the same plane as the platform." However, WMD believes that the use of asphalt will likely require more effort to maintain smooth and level planes with the platform than concrete that uses cement as the binding material.

The Committee is recommending no changes to the item under consideration.

321 BELT-CONVEYOR SCALE SYSTEMS

321-1 D N.3.1.3. Check for Consistency of the Conveyor Belt Along Its Entire Length

Add the following to the Committee's Report:

At its 2010 meeting, the USNWG on belt-conveyor scales systems concluded in its report that:

"The WG could not reach an agreement on this item within the time constraints of the meeting however, the members agreed that work on the development of this item should continue. The Technical Advisor will continue to facilitate the WG effort through the use of email, teleconference, etc. in an attempt to achieve a uniform WG position.

Bill Ripka (Thermo Fisher Scientific), speaking on behalf of the sub group of the belt conveyor-scale work group, recommended that this item be classified as developmental. What appeared to be a relatively simple change in the language developed into a larger task. Mr. Ripka stated that the two areas of agreement are to change the current tolerance from divisions to a percentage and that the error is to be determined on the minimum of one revolution of the belt. The WG is in the process of gathering data to establish the correct value for the balance change.

322 AUTOMATIC BULK-WEIGHING SYSTEMS

322-1 VC S.2.1. Zero-Load Adjustment

Add the following to the Committee's Report:

During the open hearing, the SMA stated its support for this item.

Add the following definition to Appendix D referencing the Automatic Bulk-Weighing Systems Code since the Committee is recommending that reference to the term be deleted from the Scales and Automatic Weighing Systems Codes.

zero setting mechanism - Means provided to attain a zero balance indication with no load on the load-receiving element. ~~Four~~ **Three** types of these mechanisms are: [2.20]

automatic zero-setting mechanism (AZSM). Automatic means provided to set the zero-balance indication without the intervention of the operator. [2.22]
(Added 2010)

324 AUTOMATIC WEIGHING SYSTEMS

324-1 VC S.2.1.3. Automatic Zero-Setting Mechanism

Add the following to the Committee's Report:

To be consistent with the proposed changes to item 320-2, the Committee agreed to amend the item under consideration by adding language to paragraph S.2.1.1. to read as follows and deleting the proposed language for paragraph S.2.1.3 in the Committee's Interim Report.

S.2.1.1. Automatic Zero-Tracking Mechanism. – Except for automatic checkweighers, under normal operating conditions the maximum load that can be “rezeroed,” when either placed on or removed from the platform all at once, shall be 1.0 scale division.

Except for an initial zero-setting mechanism, an automatic zero adjustment outside these limits is prohibited.
(Amended 2004 **and 2010**)

324-2A W S.2.2.4. Visibility of Operation and S.2.2.5. Subtractive Tare Mechanism

No Change.

324-2B W S.2.2.6. Consecutive Tare Operations and S.2.2.7. Indication and Printing of Weighing Results

No Change.

324-2C W S.2.3. Preset Tare Mechanism and S.2.3.1. Indication of Operation

No Change.

330 LIQUID-MEASURING DEVICES

330-1 W Temperature Compensation for Liquid-Measuring Devices Code

No Change.

330-2 D Price Posting and Computing Capability and Requirements for a Retail Motor-Fuel Dispenser (RMFD) --- Moved to 360-3, Part 3.30, Item 1

See Item 360-3, Part 3.30, Item 1 additional information on this item.

331 VEHICLE-TANK METERS

331-1 VC T.2.1. Automatic Temperature-Compensating Systems (ATCS)

Add the following to the Committee's Report:

To facilitate consistent inspection and testing of VTMs equipped with ATCS, WMD has: 1) developed revisions to its EPOs for VTMs to include more detailed test procedures relative to VTM's equipped with temperature compensators and accessories; 2) updated the NIST training materials to include guidance regarding the testing of VTMs equipped with ATCS and the use of equipment complying with relevant NIST Handbook 105 criteria; and 3) developed suggested report forms for VTMs to reflect procedures for testing VTMs equipped with ATC.

Since making the revisions, one class has been taught and feedback from the class incorporated into subsequent revisions. This information will be posted on the NIST web site. WMD is looking for continued feedback on the report form and procedure.

331-2 W UR.2.5.2.1. Automatic Temperature Compensation for Refined Petroleum Products

No Change.

336 WATER METERS

336-1 W N.3. Test Drafts and N.4. Testing Procedures

No Change.

336-2 VC N.4.2 Special Tests.

Add the following to the Committee's Report:

The Committee received support from Badger, Sensus, Neptune, Elster Amco, and Master Meter water meter manufacturers. Ed Williams (CA) also supported this item. There were no comments opposing the item.

336-3 VC T.1.1. Repeatability.

Add the following to the Committee's Report:

The Committee received support from Badger, Sensus, Neptune, Elster Amco, and Master Meter water meter manufacturers. Ed Williams (CA) also supported this item. There were no comments opposing the item.

Henry Oppermann (consultant) submitted a preliminary analysis on the data collected by California and noted large variations in some of the test results.

360 OTHER ITEMS

360-1 VC Tentative Code for Hydrogen Gas-Measuring Devices.

Add the following to the Committee's Interim Report:

The Committee agreed with modifications to Draft 5.0 of the proposed hydrogen code it received from the U.S. National Work Group (USNWG) for the Development of Commercial Hydrogen Measurement Standards. The USNWG recommended the Committee consider for a vote its latest Draft 6.0 which represents USNWG modifications to the code since January 2010.

The USNWG met in January, April, May, June, and July 2010 to work through comments received on the draft code from the U.S. regional weights and measures associations and USNWG members. At the 2010 NCWM, the USNWG provided the Committee and NCWM members with a summary of its responses to 21 of 25 comments on the code to include; (1) a single page identifying recent modifications to the code, (2) Draft 6.0 of the hydrogen code (July 2010 version), (3) Draft Guideline for the Gravimetric Test Method, and (4) Draft Test Report for the Gravimetric Test Method. The Committee also agreed to further modifications to proposed Draft 6.0 of the code based on recommendations submitted from NIST WMD and Mr. Michael Keilty (Endress-Hausser) during the July 2010 Annual Meeting. The Committee incorporated all of the modifications shown below into a final proposal of the Hydrogen Gas-Measuring Devices Code.

During the July 2010 open hearing session, the Committee received support for the proposed code from California's Division of Measurement Standards, Micro Motion, Inc., and NIST WMD (with modifications noted below). The Committee also received correspondence in support of the code from the U.S. Fuel Cell Council, Van Putten-Blue Energy Observatories Inc., the California Fuel Cell Partnership, Daimler, and Endress Hauser (with modifications noted below). The Committee recommends this final draft move forward for a vote and adoption as a tentative code.

The USNWG and Committee modifications along with rationale for the changes the Committee is proposing for adoption are shown in the following two tables.

Draft 5.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code	Draft 6.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code
Rationale for Code Modification	
<p>A.2. This code does not apply to:</p> <p>(a) devices used solely for dispensing a product in connection with operations in which the amount dispensed does not affect customer charges.</p> <p>(b) the wholesale delivery of hydrogen gas</p>	<p>A.2. This code does not apply to:</p> <p>(a).....</p> <p>(b).....</p> <p><u>(c) Devices used for dispensing a hydrogen gas with a hydrogen fuel index lower than 99.97 percent and concentrations of specified impurities that exceed level limits.</u></p>
<p>The Committee discussed the USNWG's decision to revisit its earlier decision to remove from paragraph S.3.4. examples of factors that affect changes in density. Eliminating the examples in this paragraph resulted in some inconsistencies with corresponding requirements in NIST HB 44 3.37 Mass Flow Meters Code for volume-measuring devices that indicate in mass.</p>	
<p>The USNWG recognized that the factors that affect measurement accuracy vary across technologies. However, hydrogen gas used for fuel cell vehicle refueling is limited to 300 ppm impurities. Similar to the product applications addressed in 3.34 Cryogenic Code, this code is intended to apply to homogeneous products and it should not be applied to deliveries of hydrogen blended products where automatic correction for variations in composition are required. Consequently, the USNWG included a new subparagraph (c) which specifies that the product application for these systems are intended to measure. The Committee agreed this modification should move forward for adoption.</p>	

Draft 5.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code	Draft 6.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code
Rationale for Code Modification	
<p>S.1.3.2. Numerical Value of Quantity-Value Divisions. - The value of a scale interval shall be equal to:</p>	<p>S.1.3.2. Numerical Value of Quantity-Value Divisions. - The value of <u>an scale interval (i.e., increment or scale division)</u> shall be equal to:</p>
<p>The Committee agreed with the USNWG’s decision to modify paragraph S.1.3.2 in response to a request for clarification of the term “scale interval.” The term “scale” was deleted from the text and examples were added to paragraph S.1.3.2. to clarify that the value of an “interval” shall have a numerical value that is the difference between two successive mass units (indicated or recorded).</p>	
<p>S.2.3. Nonresettable Indicator. - A device may also be equipped with a nonresettable indicator if the indicated values cannot be construed to be the indicated values of the resettable indicator for a delivered quantity.</p>	<p>S.2.3. Nonresettable Indicator. - A device may also be equipped with a nonresettable indicator if the indicated values cannot be construed to be the indicated values of the resettable indicator for a delivered quantity.</p> <p>Renumber subsequent paragraph S.2.4. through S.2.8 to S.2.3 through S.2.7.</p>
<p>The Committee agreed with the USNWG’s decision to delete paragraph S.2.3. because of the confusion with paragraph S.7. which is the requirement for a nonresettable totalizer.</p>	
<p>T.4. Tolerance Application.</p> <p>T.4.1. Type Evaluation Examinations for Devices. - For type evaluation examinations, the tolerance values shall apply under the following conditions:</p> <ul style="list-style-type: none"> (a) at any temperature and pressure within the operating range of the device, and (b) for all quantities greater than the minimum measured quantity. <p>T.4.2 Transfer Standard Test Method. - To the basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable transfer standard when compared to a basic reference standard.</p>	<p>T.4. Tolerance Application.</p> <p><u>T.4.1.5 Tolerance Application in Type Evaluation Examinations for Devices.</u> - For type evaluation examinations, the tolerance values shall apply under the following conditions:</p> <ul style="list-style-type: none"> (a) at any temperature and pressure within the operating range of the device, and (b) for all quantities greater than the minimum measured quantity. <p><u>T.4.2. Tolerance Application on Test Using the Transfer Standard Test Method.</u> - To the basic tolerance values that would otherwise be applied, there shall be added an amount equal to two times the standard deviation of the applicable transfer standard when compared to a basic reference standard.</p>

Draft 5.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code	Draft 6.0 Proposed Hydrogen Gas-Measuring Devices - Tentative Code
Rationale for Code Modification	
The Committee agreed with the USNWG's modification to rework paragraphs, T.4., T.4.1., and T.4.2. to clarify which requirements apply to type evaluation.	
<p>UR.3. Use of Device.</p> <p>UR.3.1. Unit Price and Product Identity for Retail Dispensers. - The unit price at which the dispenser is set to compute shall be conspicuously displayed or posted on the face of a retail dispenser used in direct sale.</p> <p>UR.3.2. Ticket Printer; Customer Ticket. - Vehicle-mounted measuring systems shall be equipped with a ticket printer which shall be used for all sales where product is delivered through the device. A copy of the ticket issued by the device shall be left with the customer at the time of delivery or as otherwise specified by the customer.</p> <p>UR.3.3. Printed Ticket. - The total price, the total quantity of the delivery, and the price per unit shall be printed on any ticket issued by a device of the computing type and containing any one of these values.</p> <p>UR.3.4. Ticket in Printing Device, Vehicle-Mounted Measuring Systems. - A ticket shall not be inserted into a device equipped with a ticket printer until immediately before a delivery is begun, and in no case shall a ticket be in the device when the vehicle is in motion while on a public street, highway, or thoroughfare.</p> <p>UR.3.5. Steps After Dispensing. -</p> <p>UR.3.8. Conversion Factors. ...</p>	<p>UR.3. Use of Device.</p> <p>UR.3.1. Unit Price and Product Identity for Retail Dispensers. - The unit price at which the dispenser is set to compute shall be conspicuously displayed or posted on the face of a retail dispenser used in direct sale.</p> <p>UR.3.2. Ticket Printer; Customer Ticket. Vehicle-mounted mMeasuring sSystems <u>Ticket Printer.</u></p> <p><u>UR.3.2.1. Customer Ticket. – Vehicle-mounted measuring systems</u> shall be equipped with a ticket printer which shall be used for all sales where product is delivered through the device. A copy of the ticket issued by the device shall be left with the customer at the time of delivery or as otherwise specified by the customer.</p> <p><u>UR.3.2.2. Ticket in Printing Device. - A ticket shall not be inserted into a device equipped with a ticket printer until immediately before a delivery is begun, and in no case shall a ticket be in the device when the vehicle is in motion while on a public street, highway, or thoroughfare.</u></p> <p>UR.3.3. Printed Ticket. - The total price, the total quantity of the delivery, and the price per unit shall be printed on any ticket issued by a device of the computing type and containing any one of these values.</p> <p>UR.3.4. Ticket in Printing Device, Vehicle-Mounted Measuring Systems. – A ticket shall not be inserted into a device equipped with a ticket printer until immediately before a delivery is begun, and in no case shall a ticket be in the device when the vehicle is in motion while on a public street, highway, or thoroughfare.</p> <p>Renumber subsequent paragraph UR.3.5. through UR.3.8 to UR.3.4 through UR.3.7.</p>
The Committee agreed with the USNWG's modifications to paragraphs UR.3.5. through UR.3.8. which were regrouped and subsequently renumbered to include like requirements for vehicle-mounted measuring systems' ticket printers under the same paragraph designation.	

Modifications the Committee made to Draft 6.0 of the proposed code based on recommendations received from NIST WMD and Mr. Michael Keilty are shown below:

Draft 6.0 of the Proposed Hydrogen Gas-Measuring Devices - Tentative Code	July 2010 S&T Committee Changes Made to Draft 6.0 of the Proposed Hydrogen Gas-Measuring Devices - Tentative Code
Rationale for Code Modification	
No Code Paragraph Existed	Recommendation from WMD: <u>A.4. Type Evaluation. – The National Type Evaluation Program will accept for type evaluation only those devices that comply with all requirements of this code.</u>
The Committee agreed with the NIST WMD recommendation to include a new paragraph in the draft code to recognize systems submitted for type evaluation.	
A.2. This code does not apply to: (a) devices used solely for dispensing a product in connection with operations in which the amount dispensed does not affect customer charges. (b) the wholesale delivery of hydrogen gas (c) <i>(This a newly proposed paragraph shown in the previous table in the right column.)</i>	Recommendation from Mike Keilty: A.2. This code does not apply to: (a)..... (b)..... (c)..... <u>(d) Systems that measure pressure, volume, and temperature with a calculating device to determine the mass of gas accumulated in or discharged from a tank of known volume.</u>
The Committee agreed with Mr. Michael Keilty that a modification was needed to the USNWG’s proposal for a new paragraph A.2.(d) to exclude pressure-volume-temperature (PVT) retail applications from the draft code. This new paragraph was included to specify that the code is not intended to address the uncertainties associated with PVT systems achieving temperature equilibrium. The Committee concurs with the USNWG that at some point the code can be revisited to recognize this technology when OEMs are ready to enter the marketplace and operate in commercial applications. In the interim period until the code includes appropriate requirements for PVT systems, officials should consider General Code paragraph G-A.3. Special and Unclassified Equipment when testing these systems.	
The Committee received and agreed with a recommendation from Mr. Michael Keilty (Endress-Hausser) to further modify proposed new paragraph A.2.(d) to include the text “pressure, volume, and temperature with a calculating device to determine” to clarify the methodology that is used in PVT systems.	
S.3.4. Automatic Density Correction. - An automatic means to determine and correct for changes in product density shall be incorporated in any hydrogen gas-measuring system where measurements are affected by changes in the density of the product being measured.	S.3.4. Automatic Density Correction. (a) An automatic means to determine and correct for changes in product density shall be incorporated in any hydrogen gas-measuring system where measurements are affected by changes in the density of the product being measured. (b) <u>Volume-measuring devices with automatic temperature compensation used to measure hydrogen gas as a</u>

Draft 6.0 of the Proposed Hydrogen Gas-Measuring Devices - Tentative Code	July 2010 S&T Committee Changes Made to Draft 6.0 of the Proposed Hydrogen Gas-Measuring Devices - Tentative Code
Rationale for Code Modification	
	<u>vehicle fuel shall be equipped with an automatic means to determine and correct for changes in product density due to changes in the temperature, pressure, and composition of the product.</u>
<p>The Committee agreed with a recommendation from Mr. Michael Keilty (Endress Hauser) to add a new subparagraph S.3.4.(b) to specify the factors that can influence measurements in volume-measuring devices used to measure hydrogen gas. The Committee made one additional modification to Mr. Keilty’s recommendation to delete the word “engine” because these devices are used to fuel both fuel cell and internal combustion engine vehicles.</p>	

360-2 I International Organization of Legal Metrology (OIML) Report

No Change.

360-3 D Developing Items

Part 3.30, Liquid-Measuring Devices – Item 1: Price Posting and Computing Capability and Requirements for a Retail Motor-Fuel Dispenser (RMFD)

Add the following to the Committee’s Report:

The Retail Motor-Fuel Dispenser Price Posting and Computing Capability U.S. National Work Group wishes to express its thanks to its sponsor the NCWM S&T Committee and also to NCWM members for their contributions to yesterday’s meeting discussions.

The Work Group offers this abbreviated summary on the direction it will take, based on the task it was given by the S&T Committee and input received at the meeting. The Work Group is tasked with reviewing the current NIST Handbook 44 Section 3.30 Liquid Measuring Devices Code to determine if the code requirements address rapidly changing practices for marketing retail motor-fuels to the general public. The Work Group is also tasked with developing proposals for modifying those codes that need changing and preparing them for a review by the S&T Committee.

The Work Group has laid out several next steps to establish a work plan to achieve this goal:

- (1) The Work Group will work using a teleconference and web conference meeting format to maximize its resources. The Work Group has a 1 ½ hour meeting tentatively scheduled for mid August 2010 to begin its to development of the work plan;
- (2) The Work Group will establish a tentative timeline for completing this task and will submit that timeline by e-mail to the S&T Committee for its consideration to determine if that time frame meets with the approval of the Committee;
- (3) To better manage this task and ensure input from all groups of stakeholder affected by these marketing practices the Work Group will consist of approximately 12-15 individuals who represent at least each of the following organizations/agencies/associations:

CWMA	API
NEWMA	Convenience Store Associations
SWMA	Petroleum Marketers Associations
WWMA	RMFD Manufacturers
Consumer Groups	

The Work Group is seeking input from any stakeholders that might have been overlooked and should be part of this effort. The Work Group will contact representatives from each group who expressed interest in the work to fill the positions on the Work Group.

The Work Group is also seeking additional information to ensure that it does not reinvent code that already works to address marketing practices. Therefore, the Work Group requests copies of any recent legislation or policies enacted to address these marketing scenarios be forwarded to its Chair by August 31, 2010. The Work Group wishes to examine various examples of marketing practices to establish some general categories for classifying these marketing practices and analyzing if a practice is adequately addressed by any codes it might develop. The Work Group will develop a form for stakeholders to provide information on marketing practices they regularly encounter which are either (1) not addressed in the code, (2) result in nonuniform interpretation of the application of code sections, or (3) are difficult to enforce because of conflicting codes that apply to the equipment's design and use.

Part 3.31, Vehicle-Tank Meters - Item 1: T.4. Product Depletion Test

Add the following to the Committee's Report:

The Committee heard comments from Ross Andersen (NY) reiterating NEWMA's request to place this item on the Committee's 2011 Interim Agenda.

The Committee agrees to NEWMA's request and will include this item with the list of carryover items that will be submitted to the fall regional weights and measures association meetings.

Part 4.42, Farm Milk Tanks - Item 1: N.5.1. Verification of Master Metering Systems

Add the following to the Committee's Report:

The Committee heard comments from Ross Andersen (NY) reiterating NEWMA's request to place this item on the Committee's 2011 Interim Agenda.

The Committee agrees to NEWMA's request and will include this item with the list of carryover items that will be submitted to the fall regional weights and measures association meetings.



Mr. Brett Saum, San Luis Obispo County, California, Chairman

Mr. Steve Giguere, Maine
Mr. Kenneth Ramsburg, Maryland
Mr. Paul Moyer, Nebraska
Mr. Doug Deiman, Alaska

Mr. Ted Kingsbury, Measurement Canada, Technical Advisor
Mr. Steven Cook, NIST, Technical Advisor
Ms. Tina Butcher, NIST, Technical Advisor

Specifications and Tolerances Committee