

**National Type Evaluation Technical Committee  
Measuring Sector Annual Meeting  
October 1-2, 2010 Columbia, SC**

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**Attachments Distributed with Agenda:**

Attachment #1: Proposed Revisions to Policy C – Product Family Table, from Mike Keilty (Agenda Item 1)

## National Type Evaluation Technical Committee Measuring Sector Annual Meeting October 1-2, 2010 Columbia, SC

### Meeting Agenda

#### Carry-over Items:

##### 1. Table of Key Characteristics of Products in Product Families for Meters Table

**Source:** Carryover Item from 2006-2009 Measuring Sector Agendas

**Purpose:** For the past several years, the Sector has been working to revise the “Product Family” tables in NCWM Publication 14 (Pub 14) with the goal of clarifying the tests to be conducted and products to be referenced on an NTEP Certificate of Conformance based on NTEP testing. This item is included on the agenda to allow for review of a recent revision to the tables and to determine what additional work is needed.

**Background:** Since 2006, the Sector has been working to develop and agree upon revisions to the NTEP Technical Policy on Product Families for Meters. The Sector has considered multiple iterations of the table and various formats with the goal of providing NTEP laboratories and manufacturers with guidelines that will help to improve the clarity and consistency of application of product family criteria. Please see the 2006 – 2009 Measuring Sector Meeting Summaries for details.

At the end of its 2009 meeting, the Sector reached the following conclusion:

Of three alternative versions of the table presented to the Sector during its 2009 meeting, the approach in which technologies are addressed in separate tables was viewed as a more appropriate approach. [Note: An example of this format is illustrated in Appendix C to the Sector’s 2009 Meeting Summary in a draft prepared by Henry Oppermann and further revised and reformatted by Mike Keilty.]

Mike Keilty agreed to continue to shepherd this work, coordinating with those who have expressed interest in this issue and welcoming additional input from other Sector members. Work was to be done to integrate the separated technology proposal with that presented at the 2009 Sector meeting. This newly edited version will be circulated among Measuring Sector members and discussed with those members who are able to attend the January 2010 NCWM Interim Meeting. Based on any comments received, additional revisions may be made prior to presenting a revised draft to the Sector at the 2010 Sector meeting. The goal is to develop a version for inclusion in NCWM Pub 14 in which it is easy to understand which tests and procedures must be followed for type evaluation testing.

Since the 2009 Sector meeting, Mike Keilty has continued working with members of the Sector to refine the table. Mike reported receiving suggestions at the January 2010 NCWM Interim Meeting to:

- (1) align the products in each horizontal row, and
- (2) insert a column for conductivity to the magnetic flow meter column.

Based on suggestions received and discussions at the last Sector meeting, Mike made revisions to the proposed table as outlined in Appendix A to this agenda. The revisions also include the addition of product conductivity characteristics based on data received from Dmitri Karimov, Liquid Controls. Mike noted that the first request could not be easily accomplished and would likely increase the page length of the table.

**Recommendation:** The Sector is asked to review and comment on proposed changes to NTEP Technical Policy Section C. as shown in Appendix A to this Agenda.

## 2. Testing Meters Made of Different Materials

**Source:** California NTEP Laboratory – Carryover from 2007-2009 Measuring Sector Agendas

**Purpose:** For the past several years, the Sector has been discussing the issue of how to assess variations in meter materials in conjunction with type evaluation testing. A key point of contention in these discussions revolves around changes to meter materials from that used in the meter evaluated during type evaluation. The NTEP laboratories would like more definitive criteria to help them assess when changes to meter materials are metrologically significant to the extent that additional testing should be required in order for the new material to be covered on the NTEP CC. Meter manufacturers generally believe that changes in materials should be left to the judgment of the manufacturer since they must ensure continued meter performance for their customers and, as the designers of the meter, they well understand and take into consideration product and environmental applications and adjust materials accordingly to meet the needs of the end application. The issue is further complicated by the lack of definitive criteria that would guide the NTEP laboratories in making a decision about which meter materials should be selected for testing to be representative of a range of materials.

**Background:** In 2006, the Sector considered the following proposal for adding a new section to the Technical Policy Section of Publication 14 to address meters made of different materials within the same family.

### U. Meters Made of Different Materials within the Same Family

**When multiple meters made of different materials within a meter family are submitted for evaluation all meters will be tested with at least one product from each product family to be included on the CC and at least one meter will be tested with the range of products required in the Product Family Table for the meter type (e.g., positive displacement, turbine, mass meter, etc.) submitted for evaluation.**

The Sector was unable to reach an agreement at its 2006 meeting and again reviewed this issue at its 2007, 2008, and 2009 meetings, but was again unable to reach a consensus on the item.

After discussing this issue at great length at its 2009 meeting, the Sector concluded that it would not reach a resolution on this issue by continuing to discuss it at the Sector meetings alone. Consequently, the Sector agreed to form a work group, the “Metrologically Significant Characteristics of Technologies Work Group,” to arrive at a uniform, appropriate, and clear approach for initial, subsequent, and additional tests for the performance of a device technology. The following people agreed to serve on the work group:

Chair:	Rodney Cooper
Co-Chair:	Rich Miller
Work Group Members:	Marc Buttler
	Paul Glowacki
	Mike Guidry
	Gordon Johnson
	Dmitri Karimov
	Henry Oppermann
	Steve Patoray
	Dan Reiswig

The work group was tasked to:

- (1) Create a short list of features/options affecting the metrological characteristics of each device technology by December 15, 2009;
- (2) Prepare a 1-page analysis that briefly documents and provides the rationale for including each metrological characteristic in the list (referenced in task 1) by December 15, 2009;
- (3) Review the first draft list of significant constituents and condense that list to only relevant characteristics;
- (4) Prepare a final list for a work group meeting during the NCWM Interim Meeting by January 15, 2010

**Recommendation:** The Sector will hear an update from the work group on its progress on this work. Additional background on this issue can be found in the 2006-2009 Sector Meeting Summaries.

### 3. Add Testing Criteria to NTEP Policy U “Evaluating electronic indicators submitted separate from a measuring element”

**Source:** California NTEP Lab

**Background:** At its 2007 meeting, the MS heard that Section U. of the NTEP Policy in NCWM Publication 14 allows for testing an indicator separate from a measuring element. However, specific test criteria had not been developed for this section. The Sector heard a recommendation to develop and add specific criteria for testing an indicator separate from a measuring element for this section. From 2007 to 2009, the CA NTEP laboratory worked to develop a checklist, but had received limited input on the drafts. At the 2009 Sector meeting, Dan Reiswig provided an update to the Sector on progress to develop criteria for separate electronic indicators. He reported that the draft checklist provided to the Sector follows the general format of Pub 14 and the main test procedures are at the end of the document. Questions were raised about the readiness of the checklist for inclusion in NCWM Pub 14. The Sector agreed that some additional work is needed and suggested that a small work group be formed to further develop the checklist. One additional question to consider is whether or not the checklist would apply to indicators across all technologies and applications.

At the conclusion of its 2009 meeting, the Sector agreed to the following.

- A small work group comprised of the following individuals is to further review and discuss the checklist.

Work Group Members: Rodney Cooper (Actaris)  
Maurice Forkert (Tuthill Transfer Systems)  
Dmitri Karimov (Liquid Controls)  
Rich Miller (FMC Technologies)  
Dave Rajala (Veeder-Root)  
Ralph Richter (NIST WMD)

Checklist Developer: Dan Reiswig (CA)

- The work group will provide input to Dan Reiswig (CA) at least one month prior to the March 2010 NTEP Laboratory Meeting. Dan will provide this input to the Measuring Laboratories. One additional question to consider is whether or not the checklist would apply to indicators across all technologies and in all applications.
- Following the March 2010 NTEP Laboratory meeting, Dan will modify the draft checklist based on feedback from the NTEP Measuring Labs.
- Dan will provide a copy of the draft checklist to the NIST Technical Advisor by the end of August 2010 to allow for distribution to the Sector one month prior to the Fall 2010 Sector Meeting.
- Following the fall 2010 Sector meeting, Dan will work with Sector Technical Advisor Tina Butcher (NIST) to update the draft checklist to reflect the comments from the Sector.
- Assuming the checklist requires no further modification or review by the Sector, Tina will submit the checklist to the NTEP Committee to consider for inclusion in the 2011 version of NCWM Pub 14.

**Recommendation:** The Sector will hear an update of the work group’s progress.

### 4. Policy C - Product Family Table – Change in Upper Limit for Oxygenated Blends – Note 4

**Source:** Gordon Johnson, Gilbarco, Inc.

**Background:** At its 2009 meeting, the Sector was asked to review NCWM Publication 14, Technical Policy C. Product families for meters, Note 4 in the product families table, which currently states:

**"Gasoline includes oxygenated fuel blends with up to 15% oxygenate"**

The Sector was asked to consider changing the oxygenated fuel blends from 15% to 25%. The new note 4 would read:

**"Gasoline includes oxygenated fuel blends with up to 25% oxygenate"**

At that time, Gordon Johnson, Gilbarco, Inc. advised the Sector that UL recently issued UL87A Edition 5 and provided additional information regarding the fifth issue to the Sector. This standard details the tests and specifications needed to list dispensers for Ethanol and Ethanol blends. The 5th edition specifies 3 major gasoline fuel categories:

- a) Gasoline for Use as Automotive Spark-Ignition Engine Fuel, ANSI/ASTM D4806 (Up to E10)- (Current)
- b) Gasoline/ethanol blends with nominal ethanol concentrations up to 25 percent ethanol (E25) (NEW)
- c) Gasoline/ethanol blends with nominal ethanol concentrations above 25 percent (E85) (Current)

When EPA set the new ethanol limits "standard gasoline" will include more ethanol. This affects all gasoline motor fuel dispensers currently in use. Typically we see the need to re-calibrate a meter when adding ethanol. The ethanol acts as a solvent washing away gasoline varnish and the meter may shift its calibration point.

Gordon Johnson outlined the history of this issue, noting that UL has made several significant changes to UL 87 (to include an alternative fuel standard) as a result of a push by EPA to coincide with a federal mandate to increase the levels of ethanol in vehicle fuel. The old standard for gasoline (15 % oxygenate) was revised this year to specify a 10 % limit. Gordon noted that the old standard of 15% was not selected based on any equipment data. UL also revised the standard to create a third category which allows up to a 25% blend. Gordon stated that his company is currently is recertifying its dispensers up to E85, 10%, and 15% and will mark the dispensers as such. He expressed concern regarding what will happen to existing dispensers when used for deliveries of 25%. Previously, UL put out a statement that it was up to the local fire marshal accept the electrical system for use with 15%. There is a program to buy back some 30 year old equipment. Some dispensers that are currently in use (standard pumps) were never UL rated or weights and measures approved for E85. Gordon stated that ethanol tends to wash out the sediment resulting in the dispenser giving away some product. He proposed changing the current reference in Pub 14 from 15 % standard to 25 %, noting that he has no data to illustrate the impact of the change. He indicated that both Gilbarco and Wayne are completing tests for E85, but no tests have been conducted for 25%. There is not enough ethanol in production at the moment and he foresees a gradual increase in the amount of 25% fuels. He is concerned that the limits will go above 15% and if weights and measures apply the 15% limit currently referenced in NTEP CCs, then all dispensers will be tagged and place out of service.

In its discussion of this issue prior to the 2009 Sector meeting, the NTEP Measuring Laboratories took the position that it is acceptable for a device to be used with product up to 15 % oxygenate with testing of only gasoline; however, for blends above this percent, the device must be retested with the higher percentage blends. Will Wothlie (MD) noted concerns on the part of the labs that there is no data available to illustrate the impact on the dispenser's performance of the higher blends. Jerry Butler (NC) also commented that some in the room believe that higher blends should be considered an alcohol and that alcohol and gasoline are treated differently in the current product tables. Several lab representatives also commented that, if a supporting statement can be obtained from UL, EPA, and other relevant bodies to say there will not be a problem with the existing dispensers, they might be able to accept the 25% limit.

After discussing this issue, the Sector was unable to reach agreement on the propose change. The Sector expressed its appreciation to Gordon for information regarding recent changes to the upper limit that Underwriters Laboratories (UL) has specified for levels of oxygenates in oxygenated fuel blends. The Sector agreed that this should remain an information item on the Sector's agenda.

**Recommendation:** As agreed to at the last Sector meeting, this item is included on the agenda to allow Sector members to provide any updates they might have on this issue.

## 5. Electronic Linearization for Positive Displacement Meters

Source: Maurice Forkert, Tuthill Transfer Systems

**Background:** At its 2009 meeting, the Sector was asked to add criteria into NCWM Publication 14 for electronic linearization for positive displacement meters. Maurice Forkert suggested considering Measurement Canada's "Approval Procedure for Linearization Functions Incorporated in Measuring Systems" (Document Number VO-AP-037) as the basis for the criteria, provided there is no objection by Measurement Canada or copyright violation by doing so. Maurice noted that there apparently is no regulation for electronic linearization internal to a positive displacement meter. He also suggested some additional revisions to the Measurement Canada document (see 2009 Sector Summary for details).

In discussing this issue, reference was made to NCWM Pub 14 Policy G. Range of Data Points, which addresses the use of "multi-point calibration." This policy specifies that "multi-point calibration" must be "blind and integral" which, according to the policy, is intended to mean it is programmed during the manufacture of the device and is not accessible in the field. The policy also prohibits multi-point calibration from being used as a means to establish the minimum turn down ratios of 5:1 or 10:1; however, it does allow the feature to be used to extend the measuring range beyond the minimum ratios. In discussing how this policy is to be applied in conjunction with Maurice's example, there were questions regarding the use of the term "blind and integral." Several members noted that a better definition of the term is needed in order to ensure consistent understanding of the term and its use in the application of requirements.

Maurice explained that his company had introduced a meter into the market with a linearization board and was advised by the weights and measures authority that there were no regulations to address that component. He recommended including the feature as allowable in the register and to not require a separate evaluation of this component. He explained that the part could not be removed or modified without breaking a seal. He also requested that the e-linearization feature be considered as part of the meter just as the pulse output component is looked at as part of the meter.

Henry Oppermann (Weights and Measures Consulting) commented that industry wants to be able to use e-linearization as a means to improve the performance of a meter and noted that this has been done for years with scales and load cells. Provided the performance is within acceptable levels, it should not matter how this is accomplished.

Maurice noted a distinction in his scenario is that they want the e-linearization feature to be considered a part of the meter, much as one would consider other components of the device. Understanding that the e-linearization feature is used to individually program each meter at the factory, some NTEP laboratory representatives expressed concerns about the possibility of interchanging parts in the field and the impact on meter performance and questioned what means would be provided to deter field replacements. Some manufacturers noted that this should be viewed no differently than replacing other metrologically significant parts in the field; for example, meters are not shipped back to the factory for replacement of a rotor and replacement of the e-linearization board should be viewed in the same light. It is up to the user/installer to ensure continued compliance with accuracy and other requirements.

There were also questions during the discussion regarding whether or not the e-linearization feature should be listed as a feature on the CC. Some pointed out that other device types use metrologically significant components that can be replaced in the field when problems are encountered. Repairs, adjustments, or changes to these features are generally obvious or detectable. Steve Patoray (Consultants on Certification) gave several examples of weighing device applications such as load cells (which are not repairable in the field), junction boxes (which can be protected by a security seal), and electronic boards (which are completely replaced when they fail).

The Sector discussed developing language to clarify the application of Policy G., but was unable to reach a conclusion at the meeting. While they did not identify a specific alternative, there was general agreement that the electronic linearization that is programmed during the manufacture of a device should not be readily accessible in the field without breaking an approved seal. The NTEP Labs expressed concern regarding the unique nature of the programming and how interchange of the e-linearization board would be controlled in the field. The Sector agreed that this issue requires additional work that would best be accomplished by a small work group.

At its 2009 meeting, the Sector agreed that a small work group comprised of the following individuals be established to further develop this issue for the Sector's review.

Chairman: Steve Patoray  
Work Group Members: Maurice Forkert  
Mike Frailer  
Mike Guidry  
Dmitri Karimov  
Rich Miller  
Ken Smith

The work group was tasked with the following:

- 1) Clarify Policy G. Range of Data Points by bouncing ideas off of Mike Frailer for:
  - a. Defining what is meant by multi-point calibration shall be "blind and integral" to the measuring element.
  - b. Clarifying what is meant by multi-point calibration shall be not "accessible" in the field.
- 2) Develop Language in Policy G. Range of Data Points to Allow for Uniform Interpretation and Application of the Criteria by the U.S. and Canadian Stakeholders by February 2010, including
  - a. Where necessary to clarify the intent of the criteria:
    - i. Modify Language
    - ii. Define Terminology
- 3) Review and Discuss Modifications to Policy G. at the March 2010 NTEP Measuring Lab Meeting

**Recommendation:** The Sector will hear an update of the work group's progress.

### **New Items:**

#### **6. Code Reference S.1.6.1. Indication of Delivery – Reference to Indicator Reset**

Source: Dmitri Karimov, Liquid Controls

Background: There is a need to update Test Method Step 5 of NCWM Publication 14 Code Reference S.1.6.1. Indication of Delivery (see page LMD-29), which reads as follows:

##### **Code Reference: S.1.6.1. Indication of Delivery**

7.25. Retail devices shall automatically show their initial zero condition and amount delivered up to the nominal capacity of the device. For electronic devices manufactured on or after January 1, 2006....to ensure delivery starts at zero.

7.26 For electronic devices manufactured prior to January 1, 2006....need not be indicated.

##### **Test Method Steps:**

Step 1: Set unit price on dispenser.

....

Step 5: Activate the dispenser and let the system reset to 8's, blanks then 0' s.

Putting aside the fact that there is no code reference for the "8's and blanks," this requirement might be applicable only to the old-style cathode tube-based displays. This requirement is not applicable to LED displays, which perform a segment check of the display.

For reference, Page 55 of OIML R117-1 includes the following criteria:

See attached LMD-29 Page.

From R117-1 (page 55)

- a) For fuel dispensers:
  - displaying all the elements (“eights” test if appropriate);
  - blanking all the elements (“blank” test), and displaying “zeros” for quantity and, if applicable, displaying the valid unit price and “zeros” for price, just before a new delivery starts. Each step of the sequence shall last at least 0.5 second.
- b) For all other interruptible and non-interruptible measuring systems, the test sequence shall be as described under (a) (above) or any other automatic test cycle which indicates all possible states for each element of the display.

**Recommendation:** Modify the Test Method Steps by adding the following note to Step 5:

**Note: Display segment check instead of “8’s and blanks” is allowed.**

## 7. Development of Water Meters Checklist

**Source:** Andre Noel, Neptune Technology Group, Inc.

**Background:** Utility type water meter manufacturers are receiving state requests for a National Type Evaluation Program (NTEP) Certificate of Approval. Utility type water meters under Handbook 44, Section 3.36. are evaluated under the California Type Evaluation Program (CTEP). There is no National Type Evaluation Program (NTEP) for Utility Type Water Meters.

**Recommendation:** Add a checklist for utility type water meters to NCWM Publication 14. A draft checklist is currently under development by the submitter. After updating the draft for changes made in July 2010 to NIST Handbook 44, Section 3.36. Water Meters Code), the submitter will present the checklist for Sector members to consider at the October 2010 Measuring Sector meeting.

## 8. Development of Hydrogen Gas-Measuring Devices Checklist

**Source:** NIST Weights & Measures Division

**Background:** At the July 2010 NCWM Annual Meeting, NCWM members voted to add a tentative code for commercial hydrogen gas-measuring devices to NIST Handbook 44. Since the majority of states require NTEP CCs for commercial weighing and measuring devices, offering NTEP CCs for these devices would facilitate the acceptance of these devices in the commercial marketplace and assist states in their assessment of these devices.

**Recommendation:** The Sector is asked to discuss and consider the following:

- (1) Propose that the NTEP Committee consider expanding the scope of NTEP evaluations to include hydrogen gas-measuring devices.
- (2) In anticipation that the NTEP Committee will support this proposal, establish a small working group tasked with the development of a checklist for hydrogen gas-measuring devices.

## 9. Next Meeting

**Recommendation:** The Sector is asked to develop a proposed date and location for the next meeting.

### **Additional Items as Time Allows:**

The NCWM S&T Committee would appreciate input from the Measuring Sector on the following measuring-related issues on its agenda. If time permits, the Measuring Sector is asked for comments on these issues. In the interest of brevity, the narrative for each item is abbreviated to the extent practical. Full descriptions of the items can be found in the S&T Committee's list of carryover items and its 2009 Interim Report. A copy of the full carryover items will be provided to the Sector when these are made available to the regions.

#### **10. G-S.1. Marking (Software) (S&T Carryover Agenda Item)**

**Sources:** 2009 NTETC Software Sector Agenda Item 3 and 2010 S&T Item 310-3 G-S.1. Identification. (Software)

2010 Interim Report of the S&T Committee:

(<http://ts.nist.gov/WeightsAndMeasures/Publications/10-Pub16.cfm>)

2010 Software Sector summary:

([http://ncwm.net/sites/default/files/meetings/software/2010/10\\_Software\\_Summary.pdf](http://ncwm.net/sites/default/files/meetings/software/2010/10_Software_Summary.pdf))

**Background:** Local Weights and Measures inspectors need a means to determine whether equipment discovered in the field has been evaluated by NTEP. If so, the inspector needs to know at a minimum the CC number. From this starting point, other required information can be ascertained. HB 44 currently includes three options for marking of the CC:

1. Permanent marking
2. Continuous display
3. Recall using a special operation

Makers of Purpose-built (known internationally as "Type P") equipment often choose permanent marking. For Type Approved software executing on a Universal computer (internationally known as "Type U"), permanent making is not very practical. The second option of continuous display is also undesirable as the permanent display occupies valuable operator/customer screen area. As a result most makers of software for Type U equipment opt for the special recall option. Unfortunately, HB 44 is somewhat vague about the specific means of recall. Software makers can be quite creative leaving the field inspector guesswork, frustration and wasted time. If the inspector complains, the maker notes that the recall procedure is documented in the CC. But this is precisely the information that cannot be retrieved in the field, leading to a circular argument.

Compounding the problem, makers of sophisticated built-for-purpose equipment would also like the same flexibility currently afforded to makers of software for Type U equipment. The recall method is not available to the Type P maker today.

At its March 2010 meeting, the Software Sector, in response to comments heard during the 2010 Interim meeting, revised the proposed language changes described in the NCWM S&T Committee's Interim Report Item 310-3. These revisions removed the differentiation between types of software (Type P and Type U) while still managing to achieve the Sector's objective. The revised 310-3 proposal can be seen in the 2010 Software Sector Summary and is not included here for the sake of brevity.

In summary, for S&T Item 310-3 the Sector now suggests amending the current item under consideration. The Software Sector also initiated discussion on two new concepts, which may eventually result in additional recommendations to amend G-S.1. It should be noted that these new ideas are in the developmental stage, and are included here by request of the Sector, since comments from the regions and other interested parties would be appreciated by the Software Sector members.

First, the sector sees merit to requiring some “connection” between the software identifier (i.e., version/revision) and the software itself. The proposal was as follows (with the expectation that examples of acceptable means of implementing such a link would be included in Pub 14).

Add a new sub-subparagraph (3) to G-S.1.(d) to read as follows:

***“The version or revision identifier shall be directly and inseparably linked to the software itself. The version or revision identifier may consist of more than one part, but at least one part shall be dedicated to the metrologically significant software.”***

Second, it seems that at each meeting of the Sector, the states reiterate the problems they have in the field locating the basic information required when the CC number is marked via the rather general current HB 44 requirement of ‘accessible through an easily recognizable menu, and if necessary a sub-menu’ [G-S.1.1 (b)(3)]. The states have indicated that this is too vague and field inspectors often cannot find the certificate number on unfamiliar devices.

***Recommendation/Discussion:*** The S&T Committee has been considering changes to G-S.1. to better address software-based systems. The Committee has considered multiple proposals under this item from the NTETC Software Sector and the weights and measures community. At the July 2010 NCWM Annual Meeting, the S&T Committee agreed to maintain this as an Information item on its agenda to allow for additional review and input. As noted below, the Software Sector is looking for specific feedback on proposed modifications to paragraph G-S.1. so that it can develop a revised proposal for consideration by the S&T Committee. Should time permit the Measuring Sector to discuss this item, the NCWM S&T Committee and the Software Sector would appreciate the Sector’s input.

The Software Sector would like feedback on the proposal to specify a limited number of menu items/icons for accessing the CC number (it is not hard-marked or continuously displayed) in proposed G-S.1.1. subparagraph (b) as follows:

*(b) The CC Number shall be:*

*(3) accessible through one or, at most, two levels of access.*

*(i) For menu-based systems, “Metrology”, “System Identification”, or “Help”.*

*(ii) For systems using icons, a metrology symbol (“M” or “SI”), or a help symbol (“?”, “I,” or an “i” within a magnifying glass).*

Note that this is not suggested to be the final list of valid options; the Sector would like to have feedback specifically on additional menu text/icon images that should be considered acceptable. The Sector feels that the number of acceptable options is less of an issue (within reason) than the fact that the list is finite. The sector realizes this may affect manufacturers so feedback from associate members and representative groups is appreciated as well.

#### **A Possible Compromise Solution:**

The Software Sector is asking if the restrictions for marking Type P equipment (allow the same options as for Type U) be relaxed in exchange for limiting the number of optional means for recalling the CC number when a recall sequence is required.

The proposed limitations on CC recall sequence are:

1. Recall shall not require more than two levels of operations. The CC recall method (trigger, command, etc.) may be present either on the main screen or one sub-menu/sub-screen down.
2. A limited number of menu text strings or icon shape choices are permitted for both the CC recall methods and the optional top level. (There is actually some validity to the argument this requirement is currently already implied by the term ‘readily identifiable menu’ used in HB 44 to describe the allowable means of recalling the CC.)

Of course, to affect this compromise a finite list of acceptable menu text / button icon options will have to be agreed upon and documented. Note that the states didn't express much concern about the actual number of allowable selections included (though it should be reasonable); they are more concerned that there is simply a finite list of options which the NTEP labs can reference to validate the device's implementation and that using that same list inspectors can locate the required information in the field.

Thus, the Software Sector developed the following brief initial list of ideas of menu text and icons which would form the starting point to developing the complete list of acceptable options for the readily identifiable menu. Comments and additional suggestions for entries in the list are welcome.

<i>Permitted Menu Text examples</i>	<i>Permitted Icon shape examples</i>	<i>Essential characteristics</i>
Information Info		<p>Top level menu text or icon</p> <ul style="list-style-type: none"> <li>• Icon text is a lower case “i” with block serifs</li> <li>• Text color may be light or dark but must contrast with the background color</li> <li>• Icon may have a circular border</li> <li>• Activation of this menu text/icon may invoke a second level menu text/icon that recalls metrology information.</li> </ul>
Help ?		<p>Top level menu text or icon</p> <ul style="list-style-type: none"> <li>• Icon text is a question mark</li> <li>• Text color may be light or dark but must contrast with the background color</li> <li>• Icon may have a circular border</li> <li>• Activation of this menu text/icon may invoke a second level menu text/icon that recalls metrology information.</li> </ul>
Metrology Metrological Information		<p>Top or second level menu text or icon</p> <ul style="list-style-type: none"> <li>• Icon text is an upper case “M”</li> <li>• Text color may be light or dark but must contrast with the background color</li> <li>• Icon may have a rectangle or rounded rectangle border</li> <li>• If present, the activation of this menu text/icon must recall at a minimum the NTEP CC number. Other metrology information may optionally be displayed.</li> </ul>
SI S.I.		<p>Top or second level menu text or icon</p> <ul style="list-style-type: none"> <li>• Icon text is upper case “SI”</li> <li>• Text color may be light or dark but must contrast with the background color</li> <li>• Icon may have a rectangle or rounded rectangle border</li> <li>• If present, the activation of this menu item/icon must recall at a minimum the NTEP CC number. Other metrology information may optionally be displayed.</li> </ul>
NTEP Data N.T.E.P. Certificate		<p>This one is debatable – what if the certificate is revoked? Does NTEP grant holders of CCs the right to display the logo on the device, or just in documentation?</p>

Acceptable examples:

1. The “M” icon is available on the home screen. Activation displays a new screen containing the CC number and some additional metrology information including the software version/revision number(s).
2. The “SI” icon is available on the home screen. Touch screen activation displays a pop-up containing the CC number. Releasing the icon erases the pop-up.

3. The main screen contains the “i” icon (information). Activating this icon displays a screen of other icons including the “M” icon. Activating the “M” icon displays the NTEP CC.
4. The main menu includes a “Help” selection which in turn contains a “Metrology” selection. Activation of the Metrology selection displays a pop-up screen containing all global metrological approvals, including the NTEP CC number. The user manually dismisses the pop-up screen by pressing the [X] button.
5. The main menu includes an “Info” selection which in turn contains a “SI” selection. Activation of the SI selection displays a pop-up screen containing all global metrological approvals, including the NTEP CC number. The user manually dismisses the pop-up screen by pressing the [OK] button.

#### **11. G-S.8.1. Provision for Sealing Electronic Adjustable Components, G-S.8.1. Adjustment Mode Indication, and Definitions for “Adjustment” and “Adjustment Mode” (S&T Agenda Carryover Item)**

**Background:** For several years, the NCWM S&T Committee has been considering proposed modifications to General Code paragraph G-S.8. that would help to ensure that the paragraph is being consistently interpreted during type evaluation and by the weights and measures community in field applications.

At the 2010 NCWM Annual Meeting, Darrell Flocken, Mettler Toledo, speaking as chairman of the NTETC Weighing Sector restated his report from the spring 2010 NEWMA Meeting at the open hearing. Lou Straub, Fairbanks Scales, speaking on behalf of 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.

See the 2008 NCWM Annual and 2009 Interim and Annual Reports for additional background information.

**Recommendation:** As noted in the conclusions, the NCWM S&T Committee is looking to the Weighing Sector to develop type evaluation criteria consistent with the philosophy stated in the Publication 14 LMD checklist. Thus, no action is being asked of the Measuring Sector. This item is included on the Measuring Sector’s agenda as an information item to keep Sector members informed of the progress of this NCWM S&T Issue and to acknowledge the confirmation of the criteria in the LMD checklist as being consistent with the intent of G-S.8.

## 12. G-A.6. Nonretroactive Requirements (Remanufactured Equipment) (*S&T Agenda Carryover Item*)

**Source:** WWMA and SWMA

**Purpose:** 2010 Carryover Item 310-4. Clarify the intent of the 2001 NCWM position on the application of nonretroactive requirements to devices which have been determined to have been “remanufactured.”

**Item Under Consideration:** Amend HB 44 General Code paragraph G-A.6. Nonretroactive Requirements by amending subparagraphs (a) and (b) as follows:

**G-A.6. Nonretroactive Requirements.** – “Nonretroactive” requirements are enforceable after the effective date for:

- (a) devices manufactured and remanufactured within a state after the effective date;
- (b) both new, ~~and~~ used, and remanufactured devices brought into a state after the effective date; and
- (c) devices used in noncommercial applications which are placed into commercial use after the effective date.

Nonretroactive requirements are not enforceable with respect to devices that are in commercial service in the state as of the effective date or to new equipment in the stock of a manufacturer or a dealer in the state as of the effective date.

*[Nonretroactive requirements are printed in italic type.]*

(Amended 1989 and 201X)

**Background:** NIST WMD received an inquiry from a state Weights and Measures Director regarding whether a nonretroactive paragraph in the Liquid-Measuring Devices Code of HB 44 would apply to a remanufactured device. In researching this inquiry, WMD discovered an unintended gap in the General Code requirements relative to remanufactured equipment.

- Paragraph G-S.1.2. Remanufactured Devices and Remanufactured Main Elements is a nonretroactive requirement for marking a device with the remanufacturer’s information and became enforceable as of January 1, 2002. WMD believes that this paragraph was intended to apply to remanufactured devices and remanufactured main elements that have been placed into commercial service as of the effective date of the requirement, which was January 1, 2002.
- Paragraph G-A.6. Nonretroactive Requirements. (which provides the various conditions in which nonretroactive requirements apply) does not include references to “remanufactured devices” or “remanufactured main elements.” Subparagraph (a) (of G-A.6.) references and applies to “manufactured” devices within a state. Appendix D of HB-44 defines a “manufactured” device as any commercial weighing or measuring device shipped as new from the original equipment manufacturer (OEM). Subparagraph (b) could be applied to remanufactured devices that are brought into a state, but could not be applied to those devices installed by a remanufacturer or distributor operating within the state. Subparagraph (c) applies to devices placed into commercial service that had previously been used in noncommercial applications.

Research into past NCWM Conference Reports indicates that a proposal to change the HB 44 definition of “manufactured device” was adopted by the NCWM in 2001. The definition was amended and new definitions for “remanufactured” and “repaired” devices were added, based on the recommendations of the NCWM Remanufactured Devices Task Force to provide a recommendation to distinguish remanufactured devices from repaired devices and thus give the field official tools to determine what requirements apply to both types of devices. The previous definition, shown below and identified as the “2001 HB44 definition,” included text that was intended (WMD believes) to include remanufactured devices. The new definition deleted the text “new device or any other device” to the extent that the definition from 2002 forward only applies to devices shipped as new from the OEM.

### **2001 HB 44 Definition**

**manufactured device.** Any new device or any other device that has been removed from service and substantially altered or rebuilt.

### **2002 HB 44 definition**

**manufactured device.** Any commercial weighing or measuring device shipped as new from the original equipment manufacturer.

It should be noted that the definitions for repaired and remanufactured devices were also adopted to provide guidance to officials to determine if a device has been remanufactured to “be made to operate like a new device of the same type” or repaired to bring it “back into proper operating condition” (see the 86<sup>th</sup> NCWM Annual Report S&T Item 310-1, page S&T - 5).

Since paragraph G-A.6. is silent with respect to remanufactured devices and remanufactured main elements, G-S.1.2., in WMD’s opinion, cannot be applied. This was clearly not the intent since, as indicated by its title, it was designed to apply to “remanufactured” equipment.

Because remanufactured devices compete with newly manufactured devices, WMD believes the intent of G-A.6. Nonretroactive Requirements is intended to include such equipment in the scope of the paragraph. That is, remanufactured devices and remanufactured main elements should have to comply with the most current nonretroactive requirements in effect as of the date the devices or elements are remanufactured.

A change is needed to G-A.6. to clarify the application of G-S.1.2. and other nonretroactive requirements, which WMD believes should apply to remanufactured devices and remanufactured main elements.

An additional reason to adopt the proposed language is that the proposed modification to G-A.6. would clearly support their actions in the event that Weights and Measures officials are challenged regarding the application of G-S.1.2. or other nonretroactive paragraphs.

It should be noted that device owners and remanufacturers may experience difficulty in complying with applicable nonretroactive requirements in instances where states have not previously applied them to remanufactured equipment. The extent to which this has occurred may become more evident as this issue is discussed within the regional Weights and Measures and industry associations and alternatives to alleviate this burden on existing equipment could be considered.

While developing this proposal, WMD contacted two retail motor fuel dispenser (RMFD) original equipment manufacturers and representatives from those companies both indicated that remanufactured RMFD’s should comply with the most recent HB 44 nonretroactive requirements in effect as of the date they are remanufactured.

WMD also contacted the chairman of the Remanufactured Device Task Force that was formed by the NCWM BOD in 1999. The chairman indicated that to the best of his recollection, there was no conscious discussion from the task force of how nonretroactive requirements were to apply to remanufactured equipment. He believes that different states may be enforcing nonretroactive requirements differently with respect to remanufactured equipment. Additional background information can be found in the S&T Committee’s 2010 Interim Report.

The S&T Committee had originally recommended that this item be presented for a vote at the July 2010 NCWM Annual Meeting. However, the Committee heard suggestions from two regional weights and measures associations as well as industry representatives encouraging the Committee to study the issue further before proposing any changes for a vote. Also at the July 2010 NCWM Annual Meeting, the S&T 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.

**Recommendation:** This item is included on the Sector’s agenda to keep Sector members informed of the issue and allow opportunity for input should time permit.

**13. Product Depletion Test (S&T Item – New Item)**

**Source:** Northeast Weights and Measures Association (NEWMA)

*(NOTE: Measuring Sector member Dmitri Karimov, Liquid Controls, requested that this item be included on the Sector’s agenda for discussion.)*

**Purpose:** Modify the VTM code to base the product depletion test tolerances on the meter’s maximum flow rate (a required marking on all meters), rather than the meter size. This will enable more consistent application of the tolerances for older meters, which are not required to be marked with the meter size, and address an unintentional gap which allows an unreasonably large tolerance for smaller meters.

**Background:** The NCWM S&T Committee is considering the following changes to paragraph T.4. The proposed changes would base the tolerances for the product depletion test on the maximum flow rate of the meter rather than the meter size. This item previously appeared on the S&T Committee’s Developing Items agenda and was elevated to a carryover item as a result of discussions at the July 2010 NCWM Annual Meeting. Additional background information can be found in the S&T Committee’s list of 2010 Carryover items.

**Item Under Consideration:** Amend paragraph T.4. as follows:

T.4. Product Depletion Test. – The difference between the test result for any normal test and the product depletion test shall not exceed **one-half (0.5 %) percent of the volume delivered in one minute at the maximum flow rate marked on the meter. Tolerances for typical meters are tolerance**–shown in Table T.4. Test drafts shall be of the same size and run at approximately the same flow rate.

[**Note:** The result of the product depletion test may fall outside of the applicable test tolerance as specified in Table 1.]

<b>Table T.4. Tolerances for <u>Typical</u> Vehicle-Tank Meters on Product Depletion Tests, Except Milk Meters Refer to T.4. for meters with maximum flow rates not listed.</b>	
<b>Meter-Size <u>Maximum Flow Rate</u></b>	<b>Maintenance and Acceptance Tolerances</b>
<b><u>Up to, but not including, 50 mm (2 in) 114 Lpm (30 gpm)</u></b>	<b><u>1.70 L (104 in<sup>3</sup>)<sup>1</sup> 0.57 L (0.15 gal) (34.6 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>From 50 mm (2 in) up to, but not including, 75 mm (3 in) 225 Lpm (60 gpm)</u></b>	<b><u>2.25 L (137 in<sup>3</sup>)<sup>1</sup> 1.1 L (0.30 gal) (69.3 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>75 mm (3 in) or larger 378 Lpm (100 gpm)</u></b>	<b><u>3.75 L (229 in<sup>3</sup>)<sup>1</sup> 1.9 L (0.5 gal) (115 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>758 Lpm (200 gpm)</u></b>	<b><u>3.8 L (1.0 gal) (231 in<sup>3</sup>)<sup>1</sup></u></b>

<sup>1</sup> Based on a test volume of at least the amount specified in N.3.

(Table Added 2005) (**Amended 201X**)

Alternative language for T.4. with larger tolerance for smaller meters.

**T.4. Product Depletion Test.** – The difference between the test result for any normal test and the product depletion test shall not exceed **one-half (0.5 %) percent of the volume delivered in one minute at the maximum flow rate marked on the meter for meters rated higher than 378 Lpm (100 gpm), or six-tenths (0.6 %) percent of the volume delivered in one minute at the maximum flow rate marked on the meter for meters rated 378 Lpm (100 gpm) or lower. Tolerances for typical meters are tolerance**–shown in Table T.4. Test drafts shall be of the same size and run at approximately the same flow rate.

[**Note:** The result of the product depletion test may fall outside of the applicable test tolerance as specified in Table 1.]

<b>Table T.4. Tolerances for <u>Typical</u> Vehicle-Tank Meters on Product Depletion Tests, Except Milk Meters <u>Refer to T.4 for meters with flow rates not listed.</u></b>	
<b>Meter-Size <u>Maximum Flow Rate</u></b>	<b>Maintenance and Acceptance Tolerances</b>
<b><u>Up to, but not including, 50 mm (2 in) 114 Lpm (30 gpm)</u></b>	<b><u>1.70 L (104 in<sup>3</sup>)<sup>1</sup> 0.57 L (0.18 gal) (41.6 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>From 50 mm (2 in) up to, but not including, 75 mm (3 in) 225 Lpm (60 gpm)</u></b>	<b><u>2.25 L (137 in<sup>3</sup>)<sup>1</sup> 1.1 L (0.36 gal) (83.2 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>75 mm (3 in) or larger 378 Lpm (100 gpm)</u></b>	<b><u>3.75 L (229 in<sup>3</sup>)<sup>1</sup> 1.9 L (0.6 gal) (139 in<sup>3</sup>)<sup>1</sup></u></b>
<b><u>758 Lpm (200 gpm)</u></b>	<b><u>3.8 L (1.0 gal) (231 in<sup>3</sup>)<sup>1</sup></u></b>

<sup>1</sup> Based on a test volume of at least the amount specified in N.3.

(Table Added 2005) (**Amended 201X**)

**Recommendation to Measuring Sector:** This item is included on the Measuring Sector’s agenda to keep Sector members informed of the item and to allow for Sector comment, discussion, and input to the S&T Committee.

**14. N.5.1. Verification of Master Meter Systems for Testing of Farm Milk Tanks (S&T Item – New Item)**

**Source:** Central Weights and Measures Association (CWMA)

**Purpose:** Eliminate unnecessary verification testing for master meters capable of operating within a prescribed percent of the applicable tolerance.

**Item Under Consideration:** Amend paragraph N.5.1. as follows:

**N.5.1. Verification of Master Metering Systems.** – A master metering system used to gauge a milk tank shall be verified before and after the gauging process. A master metering system used to calibrate a milk tank shall be verified before starting the calibration and re-verified every quarter of the tank capacity or every 2000 L (500 gal), whichever is greater. **A master metering system capable of operating within 25 % of the applicable tolerance in T.3. Basic Tolerance Values needs only be verified before and after the gauging process.**

**(Added 201X)**

**Background/Discussion:** (2010 Developing Item Part 4.42, Farm Milk Tanks - Item 1: N.5.1. Verification of Master Metering Systems) The CWMA received a proposal at its fall 2008 Interim Meeting to modify paragraph N.5.1. Verification of Master Metering Systems in NIST HB 44 Section 4.42. Farm Milk Tanks. USDA provided data suggesting that mass flow meters currently used to test milk tanks would not have to be verified every quarter of the tank capacity, or every 2000 L (500 gal), whichever is greater. The CWMA does not have data that supports that all mass flow meters will perform to the same standard. Based on this information the CWMA recommends this proposal be Informational and is considering the proposal outlined in the recommendation above.

At its fall 2008 meeting, NEWMA recommended this proposal be Informational. NEWMA forwarded the following additional justification for the proposed change from Mr. Richard Koeberle, Federal Milk Market Administrator:

The use of a mass flow meter has eliminated the variations seen in other types of meters used to calibrate or check farm bulk milk tanks. The reverification of the meter at every quarter of tank capacity adds time and potentially introduces errors by requiring the hose or valves to be moved before the tank is totally filled. This proposal originated by Mr. Tom MacNish, from the Cleveland Market Administrator, and was presented to the CWMA in September [2008]. Mass flow meters have been used extensively in their market with excellent results.

Data submitted with this item is posted on the S&T Committee's web page on the Members Only section of the NCWM website at:

<http://www.ncwm.net/members/index.cfm?fuseaction=st>

At the 2010 NCWM Annual Meeting, 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.

**Recommendation to Measuring Sector:** This item is included on the Measuring Sector's agenda to keep Sector members informed of the item and to allow for Sector comment, discussion, and input to the S&T Committee.

#### 15. S.2.6. Thermometer Well – Proposed New Paragraph for Section 3.32. Vehicle-Tank Meters Code (S&T)

**Source:** NCWM S&T Committee Proposal to Regional Weights and Measures Associations

*(NOTE: Measuring Sector member Dmitri Karimov, Liquid Controls, also requested that this item be included on the Sector's agenda for discussion.)*

**Background:** The NCWM S&T Committee announced at the July 2010 Annual Meeting that it intends to submit a proposal for consideration by the weights and measures community to nonretroactively require means (e.g., thermometer wells) for determining the temperature of the product at the meter during meter testing.

During discussions of proposed changes to the tolerances for Vehicle-Tank Meters (which were ultimately adopted in July 2010) equipped with automatic temperature compensating systems (paragraph T.2.1.), meter manufacturers expressed concerns about how to ensure that consistent and appropriate test procedures and equipment be used by weights and measures officials during inspections of VTMs. WMD revised the Examination Procedure Outlines for VTMs and presented this information during a training seminar in April 2010. In the process of revising and presenting the procedures, WMD received comments indicating that many VTMs are not equipped with means for determining the temperature of the product at the meter. Thus, the inspector is unable to properly apply paragraph N.5. Temperature Correction for Refined Petroleum Products, which states:

**N.5. Temperature Correction for Refined Petroleum Products.** – Corrections shall be made for any changes in volume resulting from the differences in liquid temperatures between the time of passage through the meter and the time of volumetric determination in the prover. When adjustments are necessary, appropriate petroleum measurement tables should be used.  
(Added 2007)

In order for inspectors and service personnel to determine the difference between the temperature of the product at the meter and at the prover, some means is needed for determining the temperature of the product as it passes through the meter. Inspectors have reported that few vehicle-tank meters are equipped with provisions such as a thermometer well at the meter that would enable them to determine the temperature of the product at the meter using a traceable thermometer. Consequently, the inspector is not able to make adjustments to the indications for changes due to temperature between the meter and the prover. Failing to account for differences in product temperature can, in some instances, introduce errors into the testing process, possibly resulting in the acceptance of a meter that is actually out of tolerance or the incorrect rejection of a meter that may actually be performing within applicable tolerance.

While the inspector could apply General Code paragraph G-UR.4.4. (Assistance in Testing) to require the installation of a thermometer well or other provision for determining the temperature of the product at the meter, the S&T Committee believes it is more cost effective to require this to be incorporated into the equipment purchased by the user. To minimize the impact on the manufacturers and device owners, the S&T Committee proposes that this paragraph be applied nonretroactively.

Consequently, the S&T Committee is preparing an NCWM Form 15 to submit proposed changes along the lines of the following:

Add a new paragraph to section S.2. Design of Measuring Elements of the Vehicle-Tank Meters Code:

**S.2.6. Thermometer Well, Temperature Determination** - For test purposes, means shall be provided (e.g., thermometer well) to determine the temperature of the liquid either:

- (a) in the liquid chamber of the meter, or
- (b) in the meter inlet or discharge line immediately adjacent to the meter.

[Nonretroactive as of January 1, 2012]

The Liquid-Measuring Devices Code (Section 3.30) already includes a paragraph (S.2.6. Temperature Determination - Wholesale Devices) requiring means for taking the temperature of the product at the meter for larger, wholesale meters and the Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices Code (Section 3.32., paragraph S.2.5. Thermometer Well) requires this for all LPG & NH<sub>3</sub> meters. Thus, the proposed change to the Vehicle-Tank Meters Code would also promote alignment of these codes.

**Recommendation:** This item is included on the Measuring Sector's agenda to keep Sector members informed of the item and to allow for Sector comment, discussion, and input to the S&T Committee. ***Please Note: As of the publication of the draft Sector Agenda, the S&T Committee was still finalizing its proposal, thus the information and specific proposals included in the agenda may not yet reflect the S&T's final recommendation; any updates will be provided to the Sector prior to the October 2010 Sector Meeting.***