

## Report of the Laws and Regulations Committee

Joe Gomez, Chairman  
Las Cruces, New Mexico

Reference  
Key Number

### 200 INTRODUCTION

This is the report of the Laws and Regulations Committee (hereinafter referred to as the “Committee”) for the 94<sup>th</sup> Annual Meeting of the National Conference on Weights and Measures (NCWM). It is based on the Interim Report offered in the NCWM Publication 16, “Committee Reports,” testimony at public hearings, comments received from the regional weights and measures associations and other parties, the addendum sheets issued at the Annual Meeting, and actions taken by the membership at the voting session of the Annual Meeting. The Informational items presented below were adopted as presented when this report was approved.

Table A identifies the agenda items in the report by reference key number, title, and page number. The first three digits of the reference key numbers of the items are assigned from the subject series listed below. Voting items are indicated with a “**V**” after the item number. Items marked with an “**I**” are informational. Items marked with a “**D**” are developing items. The developing designation indicates an item has merit; however, the item is returned to the submitter for further development before any further action is taken by the Committee. Items marked “**W**” have been withdrawn from consideration. Table B lists the appendices to the report, and Table C provides a summary of the results of the voting on the Committee’s items and the report in entirety.

This report contains recommendations to amend National Institute of Standards and Technology (NIST) Handbook 130, 2009 Edition, “Uniform Laws and Regulations,” or NIST Handbook 133, “Checking the Net Contents of Packaged Goods,” Fourth Edition (January 2005). Proposed revisions to the handbook(s) are shown in **bold face print** by ~~striking out~~ information to be deleted and underlining information to be added. New items proposed for the handbooks are designated as such and shown in **bold face print**. Text presented for information only is shown in *italic* print. When used in this report, the term “weight” means “mass.”

**Note:** The policy of NIST is to use metric units of measurement in all of its publications; however, recommendations received by the NCWM technical committees have been printed in this publication as they were submitted and, therefore, some may contain only reference to inch-pound units.

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Voting Results**

<b>Reference Key Number</b>	<b>House of State Representatives</b>		<b>House of Delegates</b>		<b>Results</b>
	<b>Yeas</b>	<b>Nays</b>	<b>Yeas</b>	<b>Nays</b>	
232-3	15	19	24	9	Failed
237-1	32	3	33	2	Passed

**Details of all Items  
(In order by Reference Key Number)**

**232 METHOD OF SALE REGULATION**

**Background and Discussion for Items 232-1 and 232-2 Method of Sale Regulation**

(Items 232-1 and 232-2 were withdrawn)

**Note:** This or similar proposals, which have been on the Committee’s agenda for several years, were reviewed by each of the regional weights and measures associations. The review process resulted in the submission of several different proposals and numerous comments and suggestions for the Committee to consider. Everyone expressed concern over the scope, cost, and impact of establishing a method of sale for petroleum products which required temperature compensation. This subject was widely discussed by the NCWM at public forums dating back more than 30 years. A similar proposal was made by NEWMA as recently as 2000, but the Committee withdrew it in 2001. NEWMA noted at that time that Pennsylvania, New Hampshire, Maine, and Canada permit temperature-

compensated sales of products like home heating fuel and retail gasoline. Additional historic and background information is available in previous editions of the Committee's agenda. For recent discussions on this subject, see Item 232-1 in the report of the 93<sup>rd</sup> NCWM Annual Meeting (2008) (also available at [www.nist.gov/owm](http://www.nist.gov/owm)). **This information is also available from NIST WMD on a searchable DVD, NIST Special Publication 979 "Reports of the National Conference on Weights and Measures 1905 to 2008," (Spring 2009).**

**Background/Discussion:** At the 2007 Annual Meeting, the Committee received 18 comments regarding this proposal requesting it to be made Informational to allow the Committee time for additional study and deliberation. The Committee believed the concerns of the commentators were valid, but these issues needed to be addressed by the S&T and NTEP Committees. Additional studies of the method of sale proposal would not bring anything new to the current recommendation that could not be addressed through further revisions next year. The Committee believed adopting this proposal would provide guidance to policymakers and others currently considering action on temperature compensation at the national, state, or local level. Jurisdictions opposing the proposal because their state laws or their policies prohibited ATC would not be affected by the adoption of this method of sale. The implementation of temperature compensation will be a slow process primarily because there is not an existing nationally approved temperature-compensation device, and NIST HB 44 must be revised to set forth the specifications, tolerances, and other technical requirements for this technology. NTEP will then need to undertake this work, where needed. The Committee acknowledged that some states may move ahead with their own type approvals (i.e., California) to allow for temperature compensation. The majority of the Committee believed the proposed method of sale was ready for NCWM adoption as there was not a reasonable justification for delaying the adoption of the proposal as presented. Therefore, the Committee recommended adoption of this item. This item was subjected to a lengthy discussion at the general voting session and several issues were raised along with calls for further study. The vote in the House of Representatives was 23 yeas and 16 nays while the vote in the House of Delegates was 24 yeas and 16 nays; therefore, the item did not garner enough support to pass. When an item does not clearly pass or fail under NCWM procedures, it is carried forward for reconsideration by the appropriate committee.

### **2008 Activities, Interim and Annual Meeting**

At the 2008 Interim Meeting in Albuquerque, New Mexico, the Committee considered the recommendations and comments received from the consumer groups, petroleum marketers associations, and independent business operators on this issue. The Committee received numerous written comments (refer to L&R Appendix A within the report of the 93<sup>rd</sup> NCWM Annual Meeting [2008]). During the open hearings, the Committee received comments, opinions, and concerns from more than 36 attendees. Opponents of the regulation argue that it may put the small business owners out of business due to the cost to retrofit their older equipment. A majority of the opposing comments argued that consumers would pay more for fuel at the pump to cover the implementation of ATC and these consumers would receive no benefit from the change in methods of sale. The comments also expressed concern that weights and measures officials would burden their already strained resources because of the additional time that would be needed to test pumps equipped with ATC. There was a recommendation that, if the proposed method of sale were adopted, an exemption be included for the small business owner. Several speakers said the only winners in ATC are the equipment and testing companies, lawyers, and lobbyists.

Supporting comments were received from a few state and local officials, an organization of independent truckers and a consumer advocacy group. Supporters argued that consumers obtaining gas in "hot spots" are not getting what they pay for when they purchase fuel. A few jurisdictions requested that the NCWM act to provide a uniform national standard should retailers begin selling on the basis of temperature compensated deliveries in states where the practice is permissive. Concern was voiced over the possibility that national uniformity in the method of sale of fuels at retail will diminish if some jurisdictions allow temperature compensation at retail stations while others do not. It was decided to make this item Informational, so that additional information and data could be received.

At the 2008 Annual Meeting in Burlington, Vermont, it was reported that the California Energy Commission (CEC) is conducting a study entitled "AB868 Fuel Delivery Temperature Study." One of the goals of this study will be to determine what impact ATC will have on consumers, businesses, agencies, and the marketplace within the State of California. The CEC advisory panel held three public meetings prior to the NCWM Annual Meeting in July.

In September 2008, the Government Accountability Office (GAO) published a report to the Chairman of the Committee on Science and Technology; House of Representatives on Motor Fuels “Stakeholder Views on Compensating for the Effects of Gasoline Temperature on Volume at the Pump” (refer to Appendix A of this report or view online at [www.gao.gov/new.items/d081114.pdf](http://www.gao.gov/new.items/d081114.pdf)). The GAO report summarizes that there is technology available to compensate for the effects of temperature on gas volume but the costs to implement ATC remains unclear. Benefits of ATC reflect improved measurement accuracy and greater equity between retailers and consumers. For those that oppose ATC it is argued that the cost to upgrade existing equipment would pose an economic hardship on retailers and there would be an increase in inspection and maintenance costs.

### **2009 Activities, Interim and Annual Meeting**

During open hearings at the 2009 Interim Meeting in Daytona Beach, Florida, a trade association expressed concern that the cost estimates in the CEC report are grossly understated. A California Agriculture Commissioner clarified that within the CEC report there is no reference to the “hot fuel myth.” A weights and measures official commented that temperatures do vary in regards to distribution points and refinery locations. A member of the Meter Manufacturing Association recommended to the Committee that the reference to 15.56 °C be removed or revised for technical reasons. The Committee believes that the U.S. petroleum industry will continue to use 60 °F for the foreseeable future and that if it changes to SI, that it will likely follow the international practice of using temperature adjustment tables based on 15 °C.

The AB868 Fuel Delivery Temperature Study report was completed on March 12, 2009. The report can be viewed at [www.energy.ca.gov/2009publications/CEC-600-2009-002/CEC-600-2009-002-CMF.PDF](http://www.energy.ca.gov/2009publications/CEC-600-2009-002/CEC-600-2009-002-CMF.PDF).

The State of Alaska commissioned an independent ATC cost/benefit study. The final study was released on July 5, 2009, and can be viewed at [www.alaskafuelproject.com](http://www.alaskafuelproject.com) (refer to Appendix C for a summary of the study). This study consisted of two surveys regarding a comparative analysis of the costs and benefits of selecting a gross gallon versus a net gallon.

This item has been on the agenda for several years and deserves reconsideration by the full membership of the NCWM. The Committee members reviewed available information and testimony and decided that the NCWM was now in a position to make an informed decision on this issue. This is also a decision on which the entire membership must have an opportunity to vote. The Committee decided that NCWM should provide a model law to the states that allow ATC under existing laws. The Committee felt that presenting both the ATC Steering Committee (ATCSC) proposal and the original 2007 proposal to the states was the best way to move forward. There was limited attendance of fewer than 25 state representatives at the 2009 Interim Meeting. The Committee felt strongly that each state should be involved with any action or vote taken on this proposal.

The Committee is recommending adoption of one of the proposals presented below. If Item 232-1 is adopted then Item 232-2 will be withdrawn by the Committee. If Item 232-1 is not adopted, then Item 232-2 will be recommended for adoption.

The first proposal is Item 232-1, which is the proposed method of sale, developed by the ATCSC (refer to L&R pages 6 and 8 for additional background/discussion) and modified by the Committee. This proposal will permit the use of ATC on a voluntary basis for 10 years and impose specific requirements on sellers who choose that option. At the end of 10 years the proposal will require ATC to be used in all transactions. The 10-year delay will allow industry flexibility in obtaining and using the equipment. This could potentially allow for a lower cost technology to be introduced.

The second proposal, Item 232-2, which is the original proposal (refer to L&R pages 9 and 11 for additional background and discussion), was first voted on in July 2007. This proposal will permit the use of ATC on a voluntary basis if permitted by existing state laws and does not include any mandatory deadline.

The Committee learned from its Canadian Technical Advisor that international petroleum measurement is typically conducted using 15 °C. The Committee believes that the U.S. Petroleum industry will continue to use 60 °F for the foreseeable future, and, if the U.S. Petroleum industry changes to SI, it will follow the international practice of using temperature adjustment tables based on 15 °C, so the SI values have been changed to 15 °C. In the following

proposals, values are given at 15 °C and the customary units are given at 60 °F to recognize current practices in the sale of petroleum. The word “permissive” was also stricken from the second proposal.

At the 2009 Annual Meeting in San Antonio, Texas, the Committee reviewed the data, reports and comments received (refer to Appendix D for letters submitted). The Committee withdrew both Items 232-1 and 232-2 in their entirety. Neither of these items will appear on future agendas unless a proposal is submitted by a Regional Association. It was voted by the Conference that the following language appear as presented and no changes be made after the Conference. The Conference adopted the following summary of the Committee’s assessment of the comments received on these items and also agreed not to allow the Secretary editorial privilege.

The Committee heard over 45 comments during the open hearings on both 232-1 and 232-2. The Committee reviewed all testimony, studies, letters, and past conference reports in making their decision.

There were very few proponents to ATC under 232-2. There were comments from State officials that they would not support mandatory ATC but would consider supporting permissive ATC. A major reason to have ATC would be to provide a model law for uniformity amongst the states. Those states that do not want ATC could prohibit through law or regulation. A majority of the comments indicated that there needed to be a way to make transactions transparent to consumers. A county sealer stated that the CEC recommended that more research is needed and that temperature differences exist for retailers that are in the same marketplace. A few comments were made that having temperature compensation would be the most fair and equitable means for selling fuels.

The overwhelming majority of comments were opposing ATC. Primary reasons for the Committee’s decision were conference consensus against ATC, economic cost factors, lack of benefit to consumers, absence of uniformity in the marketplace, and the additional cost to Weights and Measures officials and service companies. Due to the current economic situation, States currently have decreasing budgets which limits their resources for additional testing time and equipment. Consumers may have to incur the cost for the implementation of ATC and would have to deal with the possibility of fewer retailers in the marketplace. There was also concern with retailers in rural areas and how this additional burden would be a financial and economic hardship. Two studies, the California Energy Commission (CEC) study titled “Fuel Delivery Temperature Study” and the “Alaska Fuel Metering Project,” were submitted. With the release of the CEC study, it was documented that it was not cost beneficial for either consumer or industry. A few stakeholders expressed that making it permissive and or mandatory would be anti-competitive. There was concern about educating consumers on ATC. Consumers would have to know the difference between purchasing gas in today’s market and an ATC market in order to make a value comparison.

### **232-1 W ATC Method of Sale Proposal Developed by the NCWM ATCSC**

(This item was withdrawn)

**Committee Recommendation:** Amend the Method of Sale of Commodities Regulation in HB 130 by adding a new Section 2.32. Engine Fuels and Non-Engine Fuels (refer to L&R pages 5 and 9 for background/discussion).

### **2.32. Engine Fuels and Non-Engine Fuels.**

#### **2.32.1. Definitions.**

**2.32.1.1. Engine fuel – any liquid or gaseous matter used for the generation of power in an internal combustion engine.**

**2.32.1.2. Non-engine fuel. – any liquid or gaseous matter used for the generation of heat, power, or similar uses.**

**2.32.1.3. Temperature correction. – the process of correcting volume measurements at any temperature to an equivalent volume at a reference temperature.**

**2.32.1.4. Net volume. – the volume after temperature correction.**

**2.32.1.5. Gross volume. – a volume measurement that has not been subject to temperature correction.**

**2.32.2. Quantity.**

**2.32.2.1. Quantity, Wholesale Transactions.**

- (a) **Effective January 1, 2010, where not in conflict with other statutes or regulations all engine fuels and non-engine fuels shall may be sold, offered, or exposed for sale to wholesale customers either in terms of liquid volume in liters or gallons or barrels, or in terms of liquid volume automatically temperature corrected to 15 °C (60 °F) (15.56 °C)-in liters or gallons or barrels.**
- (b) **Effective January 1, 2020, where not in conflict with other statutes or regulations all engine fuels and non-engine fuels shall be sold, offered, or exposed for sale to wholesale customers in terms of liquid volume automatically temperature corrected to 15 °C (60 °F) (15.56 °C)-in liters or gallons or barrels.**
- (c) **When engine fuels and non-engine fuels are sold temperature corrected to wholesale customers:**
  - (1) **Correction shall be made automatically for the fuel temperature either based on the fuel standard density and reference tables specified in Table 2.32.1. or based on the actual measured density of the fuel and using reference tables specified in Table 2.32.1.**
  - (2) **If using a measured density, the seller shall maintain records of the density determination for one year and shall make those records available for inspection by a weights and measures official on request during normal business hours.**
  - (3) **All primary indications of net volume quantities on measuring devices and all receipts, invoices, bills of lading, and other transfer documents shall clearly and conspicuously identify net volume quantities with the unit of measure and the terms “Volume corrected to 15 °C” (60 °F) or “Volume corrected to 15.56 °C.”**
  - (4) **Unless otherwise agreed to by both the buyer and seller in writing, engine fuels and non-engine fuels sold temperature corrected shall be sold in that manner over at least a consecutive 12-month period.**

**2.32.2.2. Quantity, Retail Transactions.**

- (a) **Effective January 1, 2010, where not in conflict with other statutes or regulations, all engine fuels and non-engine fuels identified in Table 2.32.1. may shall be sold, offered, or exposed for sale to retail customers either in terms of liquid volume in liters or gallons, or in terms of liquid volume automatically temperature corrected to 15 °C (60 °F) (15.56 °C)-in liters or gallons.**
- (b) **Effective January 1, 2020, where not in conflict with other statutes or regulations, all engine fuels and non-engine fuels identified in Table 2.32.1. shall be sold, offered, or exposed for sale to retail customers in terms of liquid volume automatically temperature corrected to 15 °C (60 °F) (15.56 °C)-in liters or gallons.**
- (c) **When engine fuels and non-engine fuels are sold temperature corrected to retail customers:**

- (1) Correction shall be made automatically for the fuel temperature based on the fuel standard density and reference table in Table 2.32.1.
- (2) All primary indications on measuring devices and all receipts, invoices, and other transfer documents shall clearly and conspicuously identify net volume quantities with the unit of measure and the terms “Volume corrected to 15 °C” or “Volume corrected to 60 °F.” or “Volume corrected to 15.56 °C.”
- (3) If a fuel is sold temperature corrected from a measuring device at a business or fleet location, all sales of the same fuel from that business or fleet location shall be sold temperature corrected over at least a consecutive 12-month period.
- (4) All unit price advertisements shall be clearly and conspicuously marked with the term “ATC.”

<b>Table 2.32.1. Reference Tables and Fuel Densities for Temperature Correction</b>		
<b>Fuel</b>	<b>Reference Table for Wholesale or Retail Temperature Correction</b>	<b>Standard Fuel Density for Retail Transactions (optional density for wholesale transactions)</b>
<b><u>Gasoline, gasoline-oxygenate blends (3.7 mass percent oxygen, maximum), gasoline ethanol blends (10 volume percent maximum)</u></b>	<b><u>API Table 6b</u></b>	<b><u>62 API (730 kg/m<sup>3</sup>)</u></b>
<b><u>Diesel Fuel (grade 2-D), biodiesel blends (20 volume percent biodiesel, maximum)</u></b>	<b><u>API Table 6b</u></b>	<b><u>37 API (840 kg/m<sup>3</sup>)</u></b>
<b><u>Other fuels TBD</u></b>	<b><u>-</u></b>	<b><u>-</u></b>

**(Added 2009)**

**Discussion/Background for 232-1 Automatic Temperature Compensation Steering Committee (ATCSC) Background and Recommended Method of Sale**

**Background:** The ATCSC held a meeting August 27 - 29, 2007, in Chicago, Illinois, to address issues associated with potential implementation of ATC for retail motor fuel. Valuable input was received during that meeting from marketers, manufacturers, consumers, and regulatory officials. Following the meeting, the ATCSC continued to receive input from the four regional weights and measures associations.

It is not the charge of the ATCSC to endorse or oppose the implementation of ATC at retail. The ATCSC is tasked with addressing issues associated with the implementation of ATC to assist the NCWM membership in coming to a consensus on the issue. The proposals of the ATCSC reflect the Committee’s opinion on the best approach to ATC if NCWM votes to implement it.

The ATCSC developed discussion points in forming a proposal for the Method of Sale Regulation. The discussion points are documented in the report of the 93<sup>rd</sup> Annual Meeting (2008).

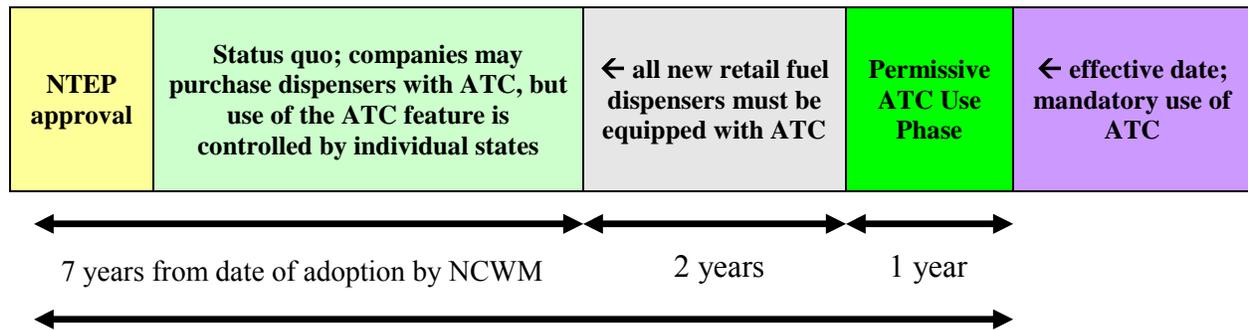
**Discussion (ATCSC):** The ATCSC believes that if temperature compensation is adopted for the retail sales of refined petroleum products, then the ultimate goal is to have mandatory use of ATC to provide a single method of sale. The time period before the mandatory use of ATC is a debatable point. The ATCSC recommends that 10 years after the adoption of an ATC method of sale, using temperature compensation should be mandatory. During the first seven years after adoption, the use of ATC should be controlled by the individual states based upon existing state laws and regulations. A relatively short period of time (two years) is suggested during which new dispensers must be equipped with ATC capability before permissive use of ATC would be permitted. This will allow station owners to decide, based on their business needs and plans, when to buy dispensers equipped with ATC and this limits the time period during which they could not use the feature after being purchased. This requirement should be placed in NIST HB 44, as a nonretroactive requirement, to address this design requirement.

The time period for the permissive use of ATC should be kept reasonably short to reduce the potential confusion that may exist in the marketplace when both compensated and uncompensated sales occur. One year is a recommended time period for the permissive use of ATC. The ATCSC discussed whether to have different implementation dates for large and small service stations based upon throughput. The ATCSC recommends a single implementation date for all service stations to reduce the time period during which gasoline and diesel fuel will be sold in compensated and uncompensated volumes. A short time period must be provided for the permissive use of ATC, since time is needed to activate the ATC equipped dispensers and to allow service companies and weights and measures officials to test the accuracy of ATC dispensers.

Under this implementation plan, there will be a seven-year period of continued uncertainty regarding the legal method of sale of these products. Some have argued that the lack of definitive language in setting a method of sale means that any volume unit is acceptable, compensated or uncompensated. This is based on the principle that laws proscribe activity. All other activities, not proscribed, are legal. Another interpretation is the broad policy change made by the NCWM in 1969 and 1970 in adopting specific language on ATC use. Language in NIST HB 44 was clear and directed specifically, and solely, to wholesale sales of petroleum products and for both wholesale and retail sales of LPG products. The ATCSC believes that inevitably each state will have to resolve this issue, unless it is resolved for us through currently pending federal class action suits.

**10 Years from Date of Adoption by NCWM**

**Implementation Option:**



**232-2 W Original Recommendation for a Method of Sale Proposal for ATC Developed by the 2007 Committee**

(This item was withdrawn)

**Committee Recommendation:** Amend the Method of Sale of Commodities Regulation in HB 130 by adding a new Section 2.32. Refined Petroleum Products (refer to L&R pages 4 and 10 for background/discussion).

**2.32. Refined Petroleum Products – ~~Permissive~~ Temperature Compensation.**

**2.32.1. Where not in conflict with other statutes or regulations, these products may be sold on the basis of temperature-compensated volume.**

2.32.2. When products are sold on the basis of temperature-compensated volume:

- (a) All sales shall be in terms of liters or gallons with the delivered volume adjusted to 15 °C or of liters or gallons with the delivered volume adjusted to 15 °C (60 °F);
- (b) Temperature compensation must be accomplished through automatic means.

2.32.3. Full Disclosure Requirements.

2.32.3.1. The primary indicating elements of measuring devices, recording elements, and all recorded or display representations (e.g., receipts, invoices, bills of lading, etc.) shall be clearly and conspicuously marked to show that the product was delivered on the basis of temperature-compensated volume;

2.32.3.2. When a product is offered for sale on the basis of temperature-compensated volume, street signs or other advertisements of its unit price must clearly and conspicuously indicate that the volume is temperature compensated.

2.32.4. Other Provisions.

2.32.4.1. At a business location all sales on a temperature-compensated basis shall be made continuously and for a period of not less than 12 months (e.g., a person may not engage the automatic temperature compensator on a device only during certain times of the year to prevent the person from taking advantage of temperature compensation).

2.32.4.2. At a business location which offers products for sale on the basis of a temperature-compensated volume, all measuring devices shall dispense on the basis of temperature-compensated volume (e.g., a person must not operate some devices at a location with automatic temperature compensators and others without compensators to prevent them from taking advantage of temperature variations).

Annotations:

1. As defined in Handbook 130 Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law, refined petroleum products are products obtained from distilling and processing of petroleum (crude oil), unfinished oils, recycled oils, natural gas liquids, refinery blend stocks, and other miscellaneous hydrocarbon compounds as well as biofuels such as E85 and biodiesel at various blends.
2. A temperature compensated liter is defined as having a reference temperature of 15 °C and A temperature compensated gallon is defined as 231 in<sup>3</sup> at a reference temperature of 15 °C (60 °F).
3. When a product is sold on the basis of a temperature-compensated volume, it is typically called “net” or “net volume,” whereas the volume before compensation is called the “gross” or “gross volume.”
4. The metric units are shown solely for the purpose of showing metric equivalents in this uniform regulation in this NIST handbook. There is no requirement that dual units be shown in any full disclosure information required under this section.
5. Temperature Compensation may be abbreviated (e.g., “Temp Comp,” or “Compensated to 60 °F”) in the interest of space as long as its meaning is clear.
6. The seller is not prohibited from providing both gross and net gallons on receipts, invoices, bills of lading or other documentation as long as it is not misleading or deceptive.

7. **A “business location” means a single outlet and should not be interpreted to mean all of the outlets or locations that a business or company operates in a jurisdiction.**

**Discussion/Background for 232-2: Temperature Compensation for Refined Petroleum Products and Other Fuels Background and Discussion**

**Sources:** The Southern Weights and Measures Association (SWMA), the Western Weights and Measures Association (WWMA), and the Central Weights and Measures Association (CWMA).

**Background:** At its 2007 Interim Meeting, the Committee received correspondence from consumer groups and other organizations and heard testimony from weights and measures officials, the petroleum industry (including the American Petroleum Institute (API)), consumers and others regarding temperature compensation of refined petroleum products. The Committee appreciates all of the data, discussion, and especially the high level of interest. The Committee acknowledges the media attention this item has drawn, and the members were pleased to learn that some agricultural commissioners and other policy makers, as well as some governors and state attorneys general, have expressed interest in temperature compensation.

Proponents for the item spoke for a need to improve the accuracy of measurements of petroleum products because of their cost and of the need to improve accountability. Opponents spoke to the cost of implementing temperature compensation and the potential for confusion in the marketplace. The Committee was made aware of legislation under consideration in Missouri and Texas that would establish different definitions for a gallon based on the ambient temperature in various areas of their states. The Committee was especially sensitive to concerns expressed by weights and measures inspectors about the potential cost and increased inspection time they may expend if temperature compensation is allowed in all applications, especially at the retail level.

**Comments Reviewed by the Committee at the 2007 Annual Meeting**

- a. The Committee noted if the temperature compensation proposal was adopted at the 2007 Annual Meeting, it would go into effect January 1, 2008, in the 18 jurisdictions that indicated they automatically adopt that regulation by reference or citation (see 2008 Edition of NIST HB 130, “Uniformity of Laws and Regulations” (page 9) for a list of those states). The Committee recognized that if the recommendation was adopted in July 2007, some jurisdictions might want to delay its implementation or exempt that particular section from being automatically adopted. Since typically, rulemaking takes longer than six months to complete, the Committee debated whether or not it should include a delayed effective date of July 1, 2009, for this regulation but took no action on this issue.
- b. The Committee discussed the subject of unscrupulous retailers artificially heating fuels and that this deceptive practice has occurred from time to time. The State of Arizona actually forbids the practice; however, the Committee did not address that issue in the following recommendation. The Committee considered if a prohibition on the artificial heating of fuels for the purpose of increasing volume at the time of sale should be added to the recommendation but no action was taken on this issue.
- c. The Committee asked to receive comments on whether or not the recommendation should allow the state director to grant (and, when justified, revoke) written waivers to some provisions if sufficient justification was provided by the business owner. The Committee discussed whether or not the requirement that all devices that dispense product at a single location might result in a hardship for some retailers or difficulties in implementing the new method of sale for specific customers (e.g., over-the-road truckers). For example, if a station decided to sell gasoline and diesel fuel on a temperature-compensated basis but also had a dispenser for K-1 Kerosene, from which limited sales were made, a waiver from the temperature-compensation requirement on all dispensers could be justified. Likewise, if a chain of truck stops decided to sell diesel fuel on a temperature-compensated basis through its high-output dispensers to truckers (e.g., its prime customers), but did not want to implement temperature-compensated sales through its gasoline dispensers, a waiver could also be justified. The purpose of the requirement that all devices at a single location be temperature compensated or not was to prevent a retailer from selling through the compensated or uncompensated dispensers when it benefited the seller. The Committee agreed flexibility

was warranted and could make acceptance of the method of sale easier to implement but took no action on this issue.

The Committee duly considered the presentations, discussions, letters, data, media stories, comments received at public hearings and in hallways, and the proposed legislation. The NCWM has posted this information and information on the activities of its ATCSC at [www.ncwm.net](http://www.ncwm.net).

Following is a list of justifications for adopting a standard that will facilitate the implementation of an orderly yet permissive approach to allowing broader use of temperature compensation in the marketplace:

- Cost of fuel has led to increased consumer and business interest in better methods of measurement, inventory control, and accountability. By now, everyone has realized or should realize that ambient temperatures are but one factor which impacts the volume of any liquid. Thus, basing a state's temperature-compensation program on regional ambient temperatures is not a technically valid approach to addressing the issue.
- The use of dual-wall storage tanks and deliveries of fuel directly from refineries result in higher temperature product.
- Awareness and concerns over the impact of temperature on the cost of fuel has come about at the same time advances in technology such as electronics and software have made compensation possible in both new and existing measuring devices at lower costs.
- Increased consumer requests that temperature compensation be used, especially in high volume deliveries, for improved measurement accuracy.
- The dramatic growth of public interest in recent years is evidenced by articles in many newspapers and widely-read magazines such as *Scientific America*. This national conversation about energy has led to greater consumer awareness, as well as interest on the part of political leaders, of energy issues and has contributed to creating an opportunity for change.

After a thorough discussion and polling by its chairman, the Committee was unanimous that it would recommend to the NCWM the adoption of a method of sale for refined petroleum products and other fuels. This would allow industry the option of selling these products on the basis of temperature-compensated sales. The decision to submit the permissive temperature-compensated method of sale for NCWM consideration was unanimous, the representative from the CWMA supported going forward with the recommendation but did not agree with including retail sales in the scope of the regulation. The Committee ultimately decided it was in the best interest of the U.S. commercial measurement system if the NCWM adopted a standard that would provide guidance to states considering legislation in this area; thus, supporting the work of the Specifications and Tolerances Committee, the National Type Evaluation Program (NTEP), and others to develop technical requirements and test procedures for both type approval and field testing for devices equipped with temperature compensation. The Committee believed those efforts were critical to facilitating the introduction of temperature compensation to the marketplace, especially in NTEP states as the NCWM learned there were no retail motor-fuel dispensers available with Certificates of Conformance that included temperature compensation functions.

At the 2009 Interim Meeting the L&R Committee dealt with various topics and considerations when addressing the development of this proposal. These items are documented in the 93<sup>rd</sup> Annual Meeting Publication 16 (2008). The Committee agreed that the metric equivalent reference temperature of 15.56 °C would be changed to 15 °C and the word "permissive" would be stricken from the proposal.

Information on the consideration of this item by the Regional Associations is presented below. Items are broken out by region with the earliest information appearing first in the report.

**Central Weights and Measures Association (CWMA):** This is an excerpt from the report of the CWMA's Laws and Regulations Committee, which considered this item at its 2007 Interim Meeting in Bettendorf, Iowa, on September 16 - 19, 2007. (Full report is available at [www.ncwm.net/central/lr/lr\\_2007\\_interim.doc](http://www.ncwm.net/central/lr/lr_2007_interim.doc).)

The CWMA L&R Committee reported that it received:

...considerable testimony both in support and opposition of the Temperature Compensation proposal during the open hearings. Many industry representatives opposed the item due to the anticipated cost of equipment and the lack of data that supports whether a better system of measurement is worth the cost. The CWMA L&R Committee cannot support the item as proposed due to the considerable opposition to the permissive language. Several state regulators feel that if permissive is adopted, it will be implemented in the northern states, not in the southern states where there appears to be more pressure to implement temperature compensation. A good example of this was given that in Canada where temperature compensation is allowed, it is not widely used in areas west of the Rockies where the climate is more temperate. The Committee further feels that making the item "Informational" will not resolve the issue. The most requested information of a cost-benefit analysis is not currently being conducted by any organization. Although several statements were made that temperature compensation may be a more equitable method of sale, many stated that it is not "perfect" nor will it resolve current issues of fraud such as artificial heating of fuel. To address the concern of "hot spots," the Committee discussed the option of amending the proposal to exclude sales at retail based upon the flow rate of dispensers as previously proposed. The Committee feels that another potential solution for a more equitable method of sale is to formulate an alternate proposal to change the method of sale to mass. Technology exists to sell motor fuel through mass flow meters. This method of sale would be more equitable for all types of fuel including alternative fuels, which would allow consumers to make value comparisons. The Committee expects that the ATC Steering Committee will provide more information which will provide direction to the conference on this issue. We look forward to their information that will provide answers to many questions. Based upon the testimony heard, the Committee recommends that the item be Withdrawn. Note: In response to the ATC Steering Committee request, the CWMA L&R Committee suggests that if this proposal goes forward as a Voting item, that there be a mandatory implementation date with little to no permissive period as a transition.

At the CWMA 2008 Annual Meeting, the L&R Committee recommended that this item continue to remain Informational. They heard from an industry representative that this item does not resolve the issue of consumers being shorted at the pump. This representative further commented that there are alternative methods for measuring BTU contents, but does not support these alternative methods. A regulatory official opposed the word "permissive."

At the CWMA Interim Meeting held September 14 - 17, 2008, in Rock Island, Illinois, the CWMA L&R Committee continued to oppose the word "permissive" in the current language of this proposal. In addition, they would like to review the GAO and CEC reports to assess their relevance.

At the CWMA 2009 Annual Meeting held May 2 - 6, 2009, in St. Louis, Missouri, the Committee recommended that both 232-1 and 232-2 be opposed based upon extensive comments from petroleum marketers and state officials heard in their open hearings. There were two concerns that were specifically discussed in 232-2; the first concern was the removal of the word "permissive" from the title while the proposal states that "products may be sold on the basis of temperature-compensated volume." The second concern was the lack of density values for the products in the proposal.

Statements were made that permissive ATC would prevent uniformity in the sale of engine fuels and non-engine fuels. ATC would not provide transparency in retail transactions and may cause consumer confusion. An industry representative commented that the science of temperature compensation is not relevant to the discrepancy of energy content caused by the varying concentrations of ethanol. There were comments made in support of this item. Members feel that the NCWM is the appropriate place to make decisions regarding ATC rather than it being mandated by either Congress or individual state legislatures.

**Northeastern Weights and Measures Association (NEWMA):** This is an excerpt from the report of the Laws and Regulations Committee meeting held at that association's 2007 Interim Meeting in Springfield, Massachusetts, on October 9 - 10, 2007.

It is clear from the majority of comments received (both in written and oral form) that strong opposition exists to the item as proposed, especially the inclusion of permissive ATC sales. NEWMA could not support an item that allowed for two methods of sale. Confusion would be widespread. Additionally, the item raises far too many questions and uncertainties that to date have not been answered. Further research must be conducted to answer those questions. The National Conference on Weights and Measures is an organization made up of weights and measures officials and industry representatives that consistently over the years has worked as a consensus organization. A consensus on this item does not exist and the item should be withdrawn. Making the item "Informational" would not bring us to the needed consensus.

At the 2008 NEWMA Annual Meeting this issue was discussed extensively. NEWMA would like to see wording developed in the method of sale to assist states where ATC is prohibited by state law or regulation. In the past, NEWMA had recommended a method of sale of gross gallons at retail only. They would like to have further development of the method of sale of gross gallons at retail. This could possibly be reviewed as a separate item.

NEWMA held their 2008 Interim Meeting October 15 - 16 in Springfield, Massachusetts. Members discussed the viability of submitting a proposal to NCWM to mandate that all sales of retail motor fuel be sold by "gross gallons" (ambient temperature). This would counter the argument "if it is not prohibited, then it is permitted." Also, it would exempt states which choose to permit ATC. The consensus of NEWMA is that ATC should be a "state issue." Although the majority of members would be comfortable with this, it was debated whether the "timing" of such a proposal may be premature. The debate resulted with a consensus to develop the proposal and postpone any action with it until the California (CEC) study is complete.

The GAO report was released in October 2008, and after reviewing this report, NEWMA members were disappointed by its conclusion. Comments within the report included "the continued uncertainties outlined by the GAO support the argument that no action be taken to adopt Automatic Temperature Compensation." NEWMA recommends that this item remain Informational.

At the 2009 NEWMA Annual Meeting, May 11 - 14, 2009 the regional members opposed both Items 232-1 and 232-2. A recommendation was made by the Committee that both items be withdrawn. The Committee discussed the CEC report which concluded that "ATC should not be required since the results of the cost benefit analysis show a net cost for consumers." A state official commented that the L&R has not demonstrated how the marketplace will be different with ATC. An industry representative commented that new gasolines will have varying BTU's and mandating ATC will not balance out the BTU difference.

A recommendation was made by the Committee that both 232-1 and 232-2 be withdrawn and replaced with the attached language prepared by Ross Andersen, NewYork, (see proposal below). This proposal will create a method of sale for motor engine fuels and heating fuels that will require all retail sales be measured in gross gallons.

Proposal to amend NIST Handbook 130, Method of Sale Regulation to create a method of sale for fuels.

## **2.XX. Engine Fuels and Heating Fuels**

### **2.XX.1. Definitions.**

**2.XX.1.1. Engine Fuel.** – any liquid used for the generation of power in an internal combustion engine. This does not include any substance that must be kept under pressure or maintained at cryogenic temperatures to remain in the liquid state.

**2.XX.1.2. Non-engine Fuel.** – any liquid matter used for the generation of heat, power, or similar uses. This does not include any substance that must be kept under pressure or maintained at cryogenic temperatures to remain in the liquid state.

**2.XX.1.3. Gross Volume.** – the volume of a liquid at the conditions at the time of sale.

**2.XX.1.4. Net Volume.** – the volume of a liquid after correction for temperature expansion/contraction to the reference temperature.

**2.XX.2. Declaration of Quantity.**

**2.XX.2.1. Retail Transactions.** – Engine fuels and non-engine fuels shall be sold or offered for sale at retail in units of gross volume, except for individual transactions of 6000 liters (1500 gallons) or more where the buyer may request to purchase in units of volume corrected to 15.56 °C (60 °F).

**2.XX.2.2. Wholesale Transactions.** – Engine fuels and non-engine fuels shall be sold or offered for sale in units of gross volume or in units of volume automatically corrected to 15.56 °C (60 °F). Factors for correction shall be those in ASTM D1250 Table 6b or other suitable reference source.

**2.XX.2.X. (Optional permissive use of temperature correction) Specific Retail Transactions.** – (Describe the specific product or type of retail transaction here) shall be sold or offered for sale in units of gross volume or in units of net volume automatically corrected to 15.56 °C (60 °F). The following density factors shall be used in automatic temperature compensating equipment for all transactions under this subsection:

(a) (Name or type of fuel for each fuel) and (density factor in API gravity, kg/m<sup>3</sup>, or g/cm<sup>3</sup>).  
(Add additional items (b), (c), etc. to this list as necessary.)

**2.XX.2.Y. (Optional mandatory use of temperature correction) Specific Retail Transactions.** – (Describe the specific product or type of retail transaction here) shall be sold or offered for sale in units of volume automatically corrected to 15.56 °C (60 °F). The following density factors shall be used in automatic temperature compensating equipment for all transactions under this subsection:

(a) (Name or type of fuel for each fuel) and (density factor in API gravity, kg/m<sup>3</sup>, or g/cm<sup>3</sup>).  
(Add additional items (b), (c), etc. to this list as necessary.)

**2.XX.3. Receipt, ticket, or sales invoice.**

**2.XX.3.1. Retail transactions, gross volume.** – If the seller provides the buyer a receipt, ticket or sales invoice, it shall declare the gross volume delivered and the appropriate unit of volumetric measure used (liter, gallon, barrel, etc).

**2.XX.3.2. Retail transactions, net volume.** – If the seller provides the buyer a receipt, ticket or sales invoice, it shall declare the net volume delivered with the appropriate unit of volumetric measure (liter, gallon, barrel, etc), and the statement “volume corrected to \_\_\_\_\_” with the blank being filled in with the reference temperature, e.g. “volume corrected to 60 °F”. In the case of a single transaction exceeding 6,000 liters (1,500 gallons) being sold on a net basis as provided in subsection 2.XX.2.1., the seller shall provide a receipt, ticket or sales invoice as described in this section, and the seller shall also declare the density of the fuel, the fuel temperature at time of sale, and the gross volume with appropriate unit of measure.

**2.XX.3.3. Wholesale transactions, gross volume.** – The seller shall provide a delivery receipt, ticket or sales invoice to the buyer declaring the volume delivered and the appropriate unit of volumetric measure used.

**2.XX.3.4. Wholesale transactions, net volume.** – The seller shall provide a receipt, ticket or sales invoice to the buyer declaring the net volume delivered with appropriate unit of measure, the density of

the fuel, the fuel temperature at time of sale, and the gross volume with appropriate unit of measure. The net volume shall be clearly designated either “net at \_\_\_\_\_” or “volume corrected to \_\_\_\_\_” with the blank filled in with the reference temperature.

**2.XX.4. Additional requirements.**

**2.XX.4.1. All transactions, gross volume.** – The seller shall not use external sources of heat to expand the volume of fuels sold on a gross volume basis. This includes any application of heat to the product, using dark colors on above-ground storage tanks to increase absorption of solar energy, or similar acts.

**2.XX.4.2. Retail transactions, net volume.**

- (a) All sales at a business location shall be in net volume units on a continuous basis. A “business location” means a single outlet and should not be interpreted to mean all of the outlets or locations that a business or company operates in a jurisdiction.
- (b) The seller shall clearly and conspicuously indicate “ATC” in association with unit price advertisements to indicate that the sales are being made on a net volume basis.

**2.XX.4.3. Wholesale transactions, net volume.** – All sales to a particular buyer in net volume units shall be in those units for a continuous 12-month period unless otherwise agreed to by the parties in writing.

Justification for the proposal: The California Energy Commission (CEC) Fuel Delivery Temperature Study has shown that mandatory ATC for RMFDs is an overwhelming net negative for consumers. In keeping with that reality, their fourth recommendation to the California Legislature suggests clarifying the statute. The obvious interpretation of that recommendation would mean mandating gross gallon sales. The proposal above is one attempt to do that in the form of a Method of Sale Regulation.

Because of the number of combinations involved, the regulation is fairly complicated. There are definitions in the first section, methods of sale in the second, and requirements for receipts in the third and general requirements for gross and net sales in the fourth. This section includes prohibition on artificially heating product to expand volume when using gross volume sales.

The proposal includes two optional sections in 2.XX.2. that permit states to either permit net sales at retail, or mandate it, for specific types of fuels or applications. This provides flexibility to states that already permit net sales for some products or applications. As the state adopts the optional section of their choice, they fill in the blanks accordingly. For example, if a state wanted to permit net sales of home heating fuels delivered from a vehicle tank meter, they could add that as 2.XX.2.3. to do that and specify product densities for #1 oil or kerosene, #2 oil and #4 oil. They may also wish to include densities for B100 and various biodiesel blends or include them under other product densities.

NEWMA believes this proposal would:

- Offer clarity of the statute as the CEC recommended
- Retain voluntary ATC usage at wholesale
- Retain mandatory gross retail sales and prohibit artificial heating
- Provide options for an individual state to specifically mandate or permit ATC for specific applications
- Permit the S&T Committee to complete its work on ATC specifications and tolerances
- Eliminate the apprehension that NCWM members have towards adopting S&T ATC items because of the concern that their inclusion into HB 44 would constitute a “method of sale”
- Permit NTEP to develop test criteria and checklists, and start certifying ATC devices
- Erase the void that exists in states that neither allow nor prohibit ATC.

NEWMA also believes the proposal does not close the door on ATC. NEWMA projects that it would facilitate ATC upgrades if and when the economics are feasible to consider ATC. It also would permit manufacturers to include ATC options to NTEP CC's in anticipation of future regulatory changes.

**Western Weights and Measures Association (WWMA):** The WWMA had an Annual Meeting September 9 - 13, 2007, in Lake Tahoe, Nevada. It voted to recommend that the Committee move a modified version of the original proposal forward as a Voting item at the 2008 NCWM Annual Meeting. The WWMA recommended removal of the term "Permissive" from the title in Section 2.30. Refined Petroleum Products - Temperature Compensation. The full report is available from NIST WMD.

The WWMA held their Annual Meeting in Anchorage, Alaska, September 7 - 11, 2008. It was recommended that this item continue to remain Informational. The WWMA would like to review the CEC report upon completion. It was requested from an industry representative that NCWM work on developing a temperature statistical analysis and to define "what is the problem" and "what is the solution" to this issue. Industry voiced concern on the cost of implementing ATC and how it will affect the retailers and consumers. On the other hand, a state W&M official expressed that something should be in place for when ATC does become available and used in the marketplace.

**Southern Weights and Measures Association (SWMA):** The SWMA held its Annual Meeting October 21 - 24, 2007, in Little Rock, Arkansas. It voted to recommend that the Committee move a modified version of the original proposal forward as a Voting item at the 2008 NCWM Annual Meeting. The amendments and other changes proposed by the SWMA are presented below. (The full report is available from the NIST L&R Technical Advisor.)

The SWMA L&R Committee heard opposition to permissive temperature compensation for retail and other meters during the open hearing primarily from industry representatives many of whom suggested that further study was needed to determine if the cost versus benefit justified adoption of the original proposal. The Committee agrees that more information would be helpful in determining the value of using ATC on retail motor-fuel dispensers that are marked to deliver less than 30 gal per minute. Several comments called for the withdrawal of the item but the Committee recognized that the item will be on the NCWM L&R Interim agenda in 2008 because it was carried over from the 2007 Annual Meeting and because the Western Weights and Measures Association supported adoption of the original item at its recent meeting. The Committee also believes that withdrawing this item as some regions have suggested would only delay consideration of this issue, which has been on the NCWM agenda in one form or another for almost a decade, because the item would likely be resubmitted by a regional association. There were other comments recommending that no further action be taken on this item or that it be tabled. One comment suggested that the original proposal be amended to limit the method of sale to Loading-Rack Meters, Vehicle-Tank Meters and Retail Dispensers which are marked to deliver 30 gal per minute or more (which are typically used in making larger quantity deliveries at truck stops). The Committee believes that separating large flow meters (some of which are already equipped with ATC) from the proposal may reduce the opposition to the proposed method of sale for ATC. A majority of the Committee recommends the following to the SWMA for adoption.

SWMA recommendation to the NCWM L&R Committee:

1. Remove the word "Permissive" from the title of the proposed method of sale for ATC.
2. Divide the item into two separate proposals.
  - a. For retail motor-fuel dispensers marked to deliver less than 30 gal/min, make it Developmental and recommend that the NCWM ATC Steering Committee lead or coordinate a study to determine if the cost/benefit justifies the implementation of ATC.
  - b. For retail motor-fuel dispensers marked to deliver 30 gal/min or more, amend the method of sale proposal and establish a mandatory implementation date. The SWMA recommends that the NCWM

L&R Committee move this item for adoption at the 2008 Annual Meeting with the following amendments:

- i. Amend Section 2.30.2. to read: When products are sold on the basis of temperature-compensated volume through Loading-Rack Meters, Vehicle-Tank Meters and Retail Motor-Fuel Dispensers marked to deliver 30 gal/min or more.
- ii. Add an implementation date of 10 years from date of adoption.

The SWMA held its Annual Meeting in Atlanta, Georgia, October 5 - 8, 2008. The SWMA Committee supports this item to remain Informational until they can review the CEC report that is to be released.

### **232-3 V Method of Sale for Fireplace and Stove Wood, Flavoring Chips and Packaged Natural Wood**

(This item neither passed or failed and was returned to Committee)

**Source:** Southern Weights and Measures Association (SWMA)

**Background:** A state cited a company in violation of their net quantity contents labeling for flavoring chips. This citation also led to this company's product being removed from sale. The company was also advised to review all its packaging and labeling for compliance with NIST HB 130 regulations. The company requested assistance from NIST WMD on the appropriate unit of metric measure for their flavoring chip packaging. Upon review it became apparent that the regulation lacked clarity for the proper unit use of metric measure by volume. When a quantity statement for cubic meter is carried out to three decimal points, it has limited meaning and is likely not useful in making value comparisons.

In HB 130, Method of Sale Regulation, Section 2.4.3.(d) states that flavoring chips shall be sold by volume, but it falls short of saying which volume units are required. Most packers also refer to Section 2.4.3. Quantity; where the guidance implies that it must be sold by the cubic meter. This permits the Method of Sale to be in conflict with Uniform Packaging and Labeling Regulation (UPLR) Declaration of Quantity for Consumer Packages Rule of 1000. Using cubic centimeters puts packers in conflict as well. Most states, if not all, give precedent to UPLR over the Method of Sale.

This item was presented at NCWM 2008 Annual Meeting and at all of the regional meetings.

At the 2009 Interim Meeting it was requested to add the words "up to one cubic foot" after the words cubic inches. The Committee agreed to modify the proposal and move it forward for a vote at the 2009 Annual Meeting.

At the CWMA 2009 Annual Meeting held in St. Louis, Missouri, on May 3 - 6, 2009, the NIST Technical Advisor recommended that the proposal be changed in Section 2.4.3.(a) to read as ...fractions of ~~liters-cubic-meters~~. A state regulator stated that the proposal conflicts with HB 44 "Units of Measures" and believes that liters should only be used for fluid measurements. After review of HB 44, Appendix C (pgs C-2 and C-8), the L&R Committee did not feel that there is a conflict. The Committee supports this item for the following reasons: "A precedent has been established for use of liters in dry measure (e.g., mulch), traditional industry practices utilize liters as their method of sale, it provides a better value comparison, and it would remove the current conflict with violation of the Rule of 1000 when cubic meters are used."

At the 2009 NEWMA Annual Meeting held in South Portland, Maine, May 11 - 14, 2009, the Committee supported this item along with the recommended changes from the NIST Technical Advisor. The NIST Technical Advisor recommended that the proposal be change in Section 2.4.3.(a) to read as ...fractions of ~~liters-cubic-meters~~. A state official stated that the changes to this section are being made to correct a technical error with the use of metric measure and that customary units will not change. An industry representative questioned whether liters would be the correct metric measure and suggested decimeters. It was noted that decimeters and liters are equivalent.

At the 2009 Annual Meeting in San Antonio, Texas, there was discussion that this proposal needs additional review by the Committee for editorial changes. The proposal is not clear and precise as presently submitted. It was recommended that the term “fraction of liters and cubic feet” be given consideration. This proposal is being returned to the Committee for additional clarification.

**Committee Recommendation:** Amend Section 2.4.3. as follows:

2.4.3. Quantity. – Fireplace and stove wood – Shall be advertised, offered for sale, and sold only by measure, using the term “cord” and fractional parts of a cord or the cubic meter, except that:

- (a) Packaged natural wood. – Natural wood offered for sale in packaged form in quantities less than  $0.45 \text{ m}^3$  ( $1/8$  cord or  $16 \text{ ft}^3$ ) shall display the quantity in terms of ~~cubic meters~~ **liters**, to include ~~decimal~~ fractions of cubic meters; or cubic feet **cubic inches up to one cubic foot**, to include fractions of **a cubic feet-foot**.

~~(Amended 200X)~~

- (b) Artificial compressed or processed logs. – A single fireplace log shall be sold by weight, and packages of such individual logs shall be sold by weight plus count.

- (c) Stove wood pellets or chips. – Pellets or chips not greater than 15 cm (6 in) in any dimension shall be sold by weight. This requirement does not apply to flavoring chips.

(Amended 1976 and 1991)

- (d) Flavoring chips. – ~~Flavoring chips shall be sold by volume.~~ **Flavoring chips offered for sale in packaged form in quantities less than  $0.45 \text{ m}^3$  ( $1/8$  cord or  $16 \text{ ft}^3$ ) shall display the quantity in terms of liters, to include fractions of liters, cubic feet, or cubic inches up to one cubic foot, to include fractions of a cubic foot.**

(Added 1998)~~(Amended 200X)~~

**Note: In determining the appropriate Method of Sale, a clear distinction must be made as to whether the wood is being sold primarily as fuel (some wood is sold as fuel but flavoring is a byproduct) or strictly a wood flavoring.**

~~(Added 200X)~~

## 237 ENGINE FUELS AND AUTOMOTIVE LUBRICANTS INSPECTION REGULATION

### 237-1 V Revise Section 2.1. Gasoline and Gasoline-Oxygenate Blends

(This item was adopted)

**Source:** Chairman, Fuels and Lubricants Subcommittee (FALS)/NIST Technical Advisor

**Background:** The original proposal of changes for Section 2.1. of the regulation was based on the belief by some members of the Subcommittee that there is ambiguity in the current regulation and a lack of acceptance of the current requirements by some states (refer to Item 237-2 in the report of the 93<sup>rd</sup> Annual Meeting in 2008). Some members of the Subcommittee believed that a uniform regulation should include a set of enforceable limits that provide consumer protection, yet build a bridge to the future predominance of blend stock use.

**Discussion:** The Fuel and Lubricants Subcommittee had met at the 2007 Interim Meeting in Jacksonville, Florida, to undertake a review of a number of significant issues related to fuel standards. One of their projects was to review and update the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in NIST HB 130.

The Subcommittee met at the 2007 NCWM Annual Meeting and continued its work on a number of items including a substantive revision of the fuel ethanol labeling requirement that the NCWM adopted at that meeting.

The Subcommittee met again on December 5, 2007, at the ASTM International (ASTM) meeting in Phoenix, Arizona, and considered proposed amendments to Section 2.1. as shown below but a consensus agreement could not be reached at that meeting. The Subcommittee held a conference call on January 15, 2008, to complete its work on the draft revisions of the law and regulation and to consider the proposed revisions to Section 2.1. After extensive deliberations, a consensus agreement on the proposed revisions to Section 2.1. could not be obtained.

At the 2008 Interim Meeting, comments were made during the open hearings where stakeholders voiced their concerns that this item is not ready to move forward. Stakeholders would like this item to go back to FALS for additional work on the language. The L&R Committee voted to make this item Informational and requested that the Fuel and Lubricants Subcommittee reconsider this issue. If the Subcommittee can resolve its differences on the proposal, it can submit amendments to this section as part of the revision to the Engine Fuels and Automotive Lubricants regulation under Item 237-1 above (refer to L&R Appendix B from the report of the 93<sup>rd</sup> NCWM Annual Meeting (2008) for written comments received on this item). This item was sent to the full Laws and Regulations Committee for consideration at the 2008 Interim Meeting on the recommendation of NIST's Technical Advisor and with the agreement of the FALS Chairman. The section must be reviewed by the NCWM because the current language may be in conflict with federal fuel waiver provisions.

At the 2008 Annual Meeting in Burlington, Vermont, the Committee received one written comment (refer to L&R Appendix B from the report of the 93<sup>rd</sup> NCWM Annual Meeting (2008) for the written comment received on this item). This section will continue to remain Informational until additional information is received from the FALS.

At the CWMA 2008 Interim Meeting it was commented that the proposal needs clarification to identify that the regulation applies to blends containing up to 10 volume percent ethanol. They voiced this concern due to the emerging use of ethanol blends between 10 % and 70 %. The CWMA L&R Committee recommends this item remain Informational until the FALS can reach consensus.

At the 2009 Interim Meeting in Daytona Beach, Florida, Ron Hayes, the FALS Chairperson, provided a new proposal that was developed by the FALS. The differences in the proposal from that published in Publication 15 (2009) and the new proposal included in this publication are stated below:

- Incorporates the language provided by Lew Gibbs in order to remove any ambiguity regarding the applicability of the permanent 1 psi vapor pressure allowances for ethanol blends.
- Explicitly restricts this section to sub-similar fuels and existing EPA waived blends.
- Modifies Classes 1 - 5 minimum V/L values except for high elevation areas. High elevation areas are based on ASTM D4814 FIG. X1.2 Reduction in Vehicle Antiknock Requirements for Altitude.
- Provides the T50 and V/L offsets to all fuels containing ethanol, including refinery blends, CBOB, and sub-octanes. Note that the Class 5 minimum was raised from the previously published values of 37.0 °C (99 °F) to a more strict value of 39 °C (102 °F) as a compromise to negative votes.
- Sets a termination date of May 1, 2012, or when ASTM D4814 Distillation 50 % and V/L limits are amended to account for the volatility effects of up to 10 volume percent ethanol, whichever comes first, whereby all fuels must meet ASTM D4814 except the 1 psi additional vapor pressure allowance for ethanol blends will continue to be allowed.
- Places the emphasis on the finished blend rather than the gasoline portion of the blending materials. This preserves the current model regulation option of utilizing a blending stock material that does not meet ASTM D4814, e.g., a high T50, as long as the final blend parameters meet the requirements of the rule.
- Editorial work to remove redundancies and all ambiguity from the rule.

Comments were heard at the 2009 Interim Meeting that supported the proposal submitted by FALS. Many attendees commended Ron Hayes (Missouri) and Randy Jennings (Tennessee) for their hard work in preparing this proposal. Randy noted that this proposal is less ambiguous and it provides consumer protection and a bridge to the future. A state expressed concern for blends in the 30 % to 40 % range. However, this proposal is only for blends up to 10 %.

At the 2009 CWMA and NEWMA Annual Meetings both regions fully supported this item.

The Committee received no opposition to the item prior to or at the 2009 Annual Meeting (refer to Appendix E for comments submitted).

**Committee Recommendation:** Amend Section 2.1. of the Uniform Engine Fuel, Petroleum Products, and Automotive Lubricants Regulation by replacing the current text with the following:

**Section 2. Standard Fuel Specifications (See NIST Handbook 130, 2009 Edition, page 172)**

**2.1. Gasoline and Gasoline-Oxygenate Blends**

**2.1.1. Gasoline and Gasoline-Oxygenate Blends (as defined in this regulation). – shall meet the most recent version of ASTM D4814 “Standard Specification for Automotive Spark-Ignition Engine Fuel” except for the permissible offsets for ethanol blends as provided in Section 2.1.3. Gasoline-Ethanol Blends.**

**2.1.2. Gasoline-Oxygenate Blends. – shall contain no more than 10 volume percent ethanol. For other oxygenates, blends shall contain no more than 2.0 mass percent oxygen except fuels containing aliphatic ethers and/or alcohols (excluding methanol) shall contain no more than 2.7 mass percent oxygen.**

**2.1.3. Gasoline-Ethanol Blends. – When gasoline is blended with 1 to 10 volume percent ethanol, the ethanol shall meet the requirements of ASTM D4806 and the blend shall meet ASTM D4814 with the following permissible exceptions:**

**2.1.3.1. (a) The maximum vapor pressure shall not exceed the ASTM D4814 limits by more than 1.0 psi for:**

**2.1.3.1.1. (1) Only 9 to 10 volume percent ethanol blends from June 1 through September 15.**

**2.1.3.1.2. (2) All blends of 1 to 10 volume percent ethanol from September 16 through May 31.**

**2.1.3.2. (b) Until May 1, 2012, or until ASTM D4814 incorporates changes to the 50 volume percent evaporated point to account for the volatility effects of up to 10 volume percent ethanol, whichever occurs earlier, the distillation minimum temperature at the 50 volume percent evaporated point shall not be less than 66 °C (150 °F) (see Notes 1 and 2).**

**2.1.3.3. (c) Until May 1, 2012, or until ASTM D4814 incorporates changes to the vapor lock protection minimum temperature for Classes 1 - 5 to account for the volatility effects of up to 10 volume percent ethanol, whichever occurs earlier, the minimum temperature for a Vapor-Liquid Ratio of 20 for the applicable vapor lock protection class for gasoline-ethanol blends shall be as follows (see Notes 1 and 2):**

**(1) Class 1 shall be 51.5-54 °C (125-129 °F)**

**(2) Class 2 shall be 49.0-50. °C (120-122 °F)**

**(3) Class 3 shall be 45.0-47 °C (113-116 °F)**

**(4) Class 4 shall be 41.5 °C (107 °F)**

**(5) Class 5 shall be 39.0 °C (102 °F)**

**(6) Class 6 shall be 35.0 °C (95 °F)**

**All gasoline and gasoline-ethanol blends sold in Area V (as shown in ASTM D4814 Appendix Fig. X1.2) shall meet the vapor lock protection minimum temperatures in ASTM D4814.**

**NOTE 1: The value for the 50 volume percent evaporated point noted in Section 2.1.3.(b) and the values for Classes 1, 2, and 3 for the minimum temperature for a Vapor-Liquid Ratio of 20 in Section 2.1.3.(c) are now aligned and identical to those that are being published in ASTM D4814-09b and apply equally to gasoline and gasoline-ethanol blends. In future editions of NIST Handbook 130, Section 2.1.3.(b) will be removed editorially and the reference to Classes 1, 2, and 3 in Section 2.1.3.(c) will be removed editorially.**

**NOTE 2: The temperature values (e.g., 54 °C, 50. °C, 41.5 °C) are presented in the format prescribed in ASTM E29 “Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.”**

For additional information contact: Ron Hayes, Chairperson FALS, phone: (573) 751-2922 or e-mail: ron.hayes@mda.mo.gov.

## **260 NIST HANDBOOK 133**

### **260-1 D Guidance on Allowing for Moisture Loss and Other Revisions**

(See Item 270-2 and 270-3 in the Report of the 93<sup>rd</sup> Annual NCWM Meeting in 2008)

**Background:** At the 2009 Interim Meeting in Daytona Beach, Florida, the NIST Technical Advisor gave a presentation to the moisture loss work group (MLWG) titled “NIST Handbook 133 Checking the Net Contents of Packaged Goods – An explanation of its statistical requirements and approaches to allowing for moisture loss from packaged goods.”

The MLWG also reviewed draft changes it has developed to revise and update the 4<sup>th</sup> Edition of NIST Handbook 133 “Checking the Net Contents of Packaged Goods” 2005. Some of the changes were developed to improve the guidance on making moisture allowances. Listed below is a table of proposed corrections and revisions for review. It was requested that comments or concerns regarding the draft changes be submitted into the NIST Technical Advisor. It was recommended that the states distribute this document to interested parties within their state for comment. The MLWG will meet Sunday, July 12, 2009, at the Annual Meeting in San Antonio, Texas, to consider any comments received prior to the meeting.

The United States Department of Agriculture (USDA), Food Safety and Inspection Service (FSIS) issued a final ruling on 9 CFR parts, 317, 381, and 442 (refer to Table B, Appendix B) “Determining Net Weight Compliance for Meat and Poultry Products” which state the procedures set forth for determining “net weight compliance.” This rule which requires the use of the 4<sup>th</sup> Edition of NIST HB 133 “Checking the Net Contents of Packaged Goods” for use in all inspections of packages of meat and poultry products subject to federal law and USDA regulations effective October 9, 2008. Therefore, the incorporated provisions of NIST Handbook 133 do not serve merely as compliance guidance, but are a part of the meat and poultry products inspection regulations.

To be consistent with this final rule, state and local officials must determine net weight compliance for meat and poultry products, including single-ingredient, raw poultry, in a manner that includes the free-flowing liquids as part of the product and not part of the tare weight.

The MLWG updated NIST HB 133 Section 2.3. “Basic Test Procedure” to be consistent with 9 CFR parts, 317, 381, and 442. That means removing any reference to the “wet tare” method for determining net weight of USDA restricted products, since FSIS considers free-flowing liquid to be part of the product.

At the CWMA 2009 Annual Meeting held May 3 - 6 in St. Louis, Missouri, the Committee recommended support of this item after reviewing the current proposed revisions to HB 133. Comments documented during open hearings included the following recommendations from an industry representative: Chapter 1-3 – add “compliance” to the reasons listed since manufacturers “overpack” to meet current regulations; Chapter 1-2 – “moisture” should be

inserted in front of allowance (last paragraph of L&R - C5; there is a need to recognize that other products may be subject to moisture loss for which allowances have not been established; Chapter 2-3 and Chapter 2-5 – the dates referenced can be removed since they are already in the past. The representative cautioned that this proposal does not “finish” the issue with moisture loss. There are two questions which remain: 1) What guidance can be provided for manufacturers with products other than those listed for moisture loss? and 2) What methodology is necessary for manufacturers to demonstrate the data needed for a moisture allowance?

A state regulator objected to this proposal as a voting item and stated that members cannot vote on this item since the information will not be available until the July meeting. He recommended that the proposal be moved to Informational. He acknowledged that Handbook 133 is a NIST publication but stated that due process must be provided since the NCWM does vote to adopt the changes in this handbook.

At the CWMA voting session, the membership voted not to accept the recommendation of the Committee and recommended the item be made Informational.

At the 2009 NEWMA Annual Meeting, held May 11 - 14, 2009, in South Portland, Maine, the Committee recommended support of this item. The group discussed the meaning of “editorial” and agreed that due to the volume of changes being recommended, the correct process is to review all comments received, and then have a vote on them by NCWM. A state official suggested that the document be distributed over the NIST Commodities Server List. A recommended change to HB 133 Chapter 3, Section 2.6. specifically references the use of glaze with frozen seafood products. It was suggested that wording include other glazed products such as frozen chicken (i.e., glazed chicken wings).

At the NCWM 2009 Annual Meeting in San Antonio, Texas, the MLWG met on July 12. The NIST Technical Advisor informed the Committee and the MLWG that the draft HB 133 was sent out mid-May 2009 on the Weights and Measures Directors, NCWM HB 44 and Commodities list servers, and e-mailed to interested stakeholders, MLWG attendees, and trade associations. Additional comments and recommendations received were distributed to the Committee.

Handbook 133 was reviewed in its entirety by the MLWG. Current changes and recommendations to HB 133 are reflected in Appendix F. State Directors voiced concern that they had not had ample time to thoroughly review and evaluate the changes. A working draft document of Handbook 133 is located in Appendix G.

Committee recommendation is to keep this item Informational. NIST will incorporate changes from the July 12 MLWG meeting. NIST will disseminate this information to all stakeholders using their contact point information system and list servers (W&M Directors and the NCWM HB 44 and Commodities list server).

## **270 OTHER ITEMS – DEVELOPING ITEMS**

### **INTRODUCTION**

The NCWM established a mechanism to disseminate information about emerging issues which have merit and are of national interest. Developing items have not received sufficient review by all parties affected by the proposals or may be insufficiently developed to warrant review by the NCWM L&R Committee. The Developing items listed are currently under review by at least one regional association, subcommittee, or work group (WG).

The Developing items are marked according to the specific NIST handbook into which they fall – HB 130 or HB 133. The Committee encourages interested parties to examine the proposals included in the appendices and to send their comments to the contact listed in each part.

The Committee asks that the regional weights and measures associations, subcommittees, and WGs continue their work to fully develop each proposal. Should an association, subcommittee, or WG decide to discontinue work on a Developing item, the Committee asks that it be notified. When the status of an item changes because the submitter withdraws the item, the item will be listed in a table below. For more details on items moved from the Developing items list to the Committee’s main agenda, refer to the new reference number in the main agenda.

**270-1 D Amend Section 2.2.1. in Handbook 130, Uniform Engine Fuels Regulation – Premium Diesel Lubricity**

**Source:** Southern Weights and Measures Association (SWMA) (See Item 270-5 in the Report of the 92<sup>nd</sup> Annual NCWM Meeting in 2006)

**Background/ Discussion:** (Refer to the NCWM 93<sup>rd</sup> Annual Meeting (2008) for background information on this Item.) A member of the petroleum industry believed the test and associated tolerances for lubricity on premium diesel specified in Section 2.2.1.(d) were inconsistent with that for regular diesel. Effective January 1, 2005, the test tolerance for regular diesel lubricity was the ASTM D6079 reproducibility of 136  $\mu\text{m}$  (see ASTM D975-04b). The NCWM chose to accept the ASTM reproducibility limits for all diesel (D975) and gasoline (D4814) properties (see Section 7.2.2. Reproducibility), but chose a different reproducibility limit for premium diesel lubricity without providing any explanation as to why the ASTM reproducibility limit was insufficient. If the NCWM intended to impose a stricter lubricity requirement for premium diesel, it should have designated a tighter specification for this property, not a different test tolerance (e.g., for regular and premium gasoline, premium has a different octane specification than for regular, but the test tolerance is the same). ASTM reproducibility limits were, by definition, based on establishing a 95 % probability that product that should pass, will pass. Applying an average test as specified in Section 2.2.1.(d) reduced that probability to 80 %.

At the WWMA 2006 Annual Meeting, the WWMA L&R Committee received only one comment regarding this item, acknowledging the ongoing review by the Fuels and Lubricants Subcommittee (FALS). The WWMA noted that the NCWM L&R Committee forwarded the proposal for review by the Subcommittee and agreed this item should remain Developmental pending its recommendation.

At its 2006 Interim Meeting, the CWMA indicated the NCWM Fuel and Lubricant Subcommittee would make recommendations after ASTM improved the test method's precision and after the conclusion of other tests. The CWMA L&R Committee was awaiting the recommendation from the Subcommittee.

During the 2007 Interim Meeting, the Committee carried this item over as an Informational item. The Committee sent this proposal to FALS and requested its recommendation on how to proceed with the issue. The FALS suggested this item remain on the agenda as an Informational item until further notice and reported that the activities of ASTM International and the Coordinating Research Council were continuing.

At the 2008 Interim Meeting in Albuquerque, New Mexico, and the 2008 Annual Meeting in Burlington, Vermont, the Committee carried this item over as a Developing item. This proposal was sent to FALS for its recommendation on how to proceed with the issue. FALS suggested this item remain on the agenda as a Developmental item.

At the CWMA 2008 Interim Meeting the Committee requested that this item remain Informational pending release of the FALS recommendation, Coordinating Research council study and the ASTM Lubricity Test Method Task Force reports. At the NEWMA, WWMA and SWMA 2008 Annual Meetings the Committees recommended that this item remain Informational from FALS.

NEWMA held their Interim Meeting in October 2008 where they heard from a representative of the bio-diesel industry who briefed members on the newly adopted FTC standards regarding bio-diesel products, including the labeling of B-5, B-20, and B-100. One member expressed a concern regarding the "field testing" of bio-fuel blends and quality. This member also expressed that not enough testing occurs with regard to "octane quality" and that bio-blend testing would probably be conducted even less.

At the 2009 Interim Meeting in Daytona Beach, Florida, FALS reported to the Committee that they are awaiting development of items from ASTM.

At the CWMA 2009 Annual Meeting, the Committee recommended that this item remain informational. The Chairman of the Fuels and Lubricants Subcommittee provided an update on the work being done at ASTM. ASTM conducted a round robin to develop better precision for measuring lubricity. There is a Coordinating Research Council study to determine whether the wear scar limit is adequate to provide protection.

At the 2009 NEWMA Annual Meeting, the Committee recommended that this item remain Informational. The Chairman of the Fuels and Lubricants Subcommittee stated the committee is continuing to work on this item.

At the 2009 Annual Meeting held in San Antonio, Texas, the FALS Chairperson gave an update that ASTM is still working on improving the precision of the test method. This should go to ballot at ASTM this semester and be final in December. The Committee recommends that this item remain Informational until ASTM adopts a revision to its standard.

**Proposal:** Amend Section 2.2.1. Premium Diesel Fuel in Handbook 130 Uniform Engine Fuels and Automotive Lubricants Regulation. The following reflects the current text as it was modified in 2003.

**2.2.1. Premium Diesel Fuel.** – All diesel fuels identified on retail dispensers, bills of lading, invoices, shipping papers, or other documentation with terms such as premium, super, supreme, plus, or premier must conform to the following requirements:

- (a) **Cetane Number.** – A minimum cetane number of 47.0 as determined by ASTM Standard Test Method D613.
- (b) **Low Temperature Operability.** – A cold flow performance measurement which meets the ASTM D975 tenth percentile minimum ambient air temperature charts and maps by either ASTM Standard Test Method D2500 (Cloud Point) or ASTM Standard Test Method D4539 (Low Temperature Flow Test, LTFT). Low temperature operability is only applicable October 1 - March 31 of each year.
- (c) **Thermal Stability.** – A minimum reflectance measurement of 80 % as determined by ASTM Standard Test Method D6468 (180 min, 150 °C).
- (d) **Lubricity.** – A maximum wear scar diameter of 520  $\mu\text{m}$  as determined by ASTM D6079. If an enforcement jurisdiction's single test of more than 560  $\mu\text{m}$  is determined, a second test shall be conducted. If the average of the two tests is more than 560  $\mu\text{m}$ , the sample does not conform to the requirements of this part.

(Amended 2003)

For additional information, please contact Ron Hayes, FALS Chairman, (573) 751-2922 or ron.hayes@mda.mo.gov by e-mail.

## **270-2 D Fuels and Lubricants Subcommittee (FALS)**

**Background:** The Subcommittee had met on January 24, 2007, at the 2007 NCWM Interim Meeting to undertake a review of a number of significant issues related to fuel standards. Their first project was to undertake a major review and update of the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in HB 130. The Subcommittee also met at the 2007 Annual Meeting and continued its work on a number of items in addition to preparing a major revision of the Fuel Ethanol Specifications.

An additional project will be to update and possibly expand the Basic Engine Fuels, Petroleum Products, and Lubricants Laboratory Publication. The Subcommittee will undertake other projects as time and resources permit.

At the 2009 Interim Meeting and Annual Meeting, the FALS Chairperson informed the Committee that FALS is working toward getting changes made to the language within the document.

If you would like to participate in this Subcommittee, contact Ron Hayes, Chairperson Fuels and Lubricants Subcommittee, at (573) 751-2922, e-mail: ron.hayes@mda.mo.gov or Ken Butcher at (301) 975-4859, e-mail: kbutcher@nist.gov.

### **270-3 I Pelletized Ice Cream**

**Background:** At the 2008 Annual Meeting open hearings, Cary Frye from the International Ice Cream Association (IICA), gave a briefing on behalf of industry on pelletized ice cream. Ms. Frye gave a briefing on the product, standard of identity, test method procedures and several other key points. Ms. Frye informed that conference that additional assistance would be required from the Food and Drug Administration (FDA) (refer to Appendix H). Once FDA has addressed the issues and concerns, NIST will host a second meeting at NIST in Gaithersburg, Maryland, to follow up and seek resolution on the outstanding concerns. NIST will send out a meeting announcement to all state Directors and all other interested parties via the NIST W&M list server.

The NIST Weights and Measures Division submitted to the Committee detailed minutes pertaining to the June 27, 2008, meeting held at NIST in Gaithersburg, Maryland, concerning issues and concerns with the pelletized ice cream product. The minutes (refer to Table B Appendix E refer to Item 237-2 in the report of the 94<sup>th</sup> Interim Meeting in 2009) provide great detail of the current issue, background information, representatives and manufacturers, method of sale, and test method procedure.

This item has been presented at the WWMA and SWMA Annual Meeting and at the NEWMA and CWMA Interim Meetings. NEWMA discussed this issue, including the FDA's role and their impact on the NCWM process. One member stated that the FDA may be slow to reach a decision because of an impending change in leadership. Another member expressed the difficulty (practical experience) of testing this product.

All regions are in agreement that this item should remain Developmental until further information is received from FDA. At the 2009 Interim Meeting, it was reported by the NIST Technical Advisor that FDA is actively working on this item.

At the 2009 Annual Meeting in San Antonio, Texas, the NIST Technical Advisor presented a letter dated April 17, 2009, (see Appendix I) from the FDA regarding their decision regarding the method of sale for pelletized ice cream. The FDA declared that pelletized ice cream is a semisolid food, in accordance with 21 CFR 101.105(a), the appropriate net quantity of content declaration for this type of product is net weight. An FDA official attending the Annual Meeting stated that manufacturers have until April 2010 to modify their labels with a net weight declaration. Manufacturers that are unable to meet this deadline will need to contact the FDA. The FDA will look at each extension request on a case-by-case basis only.

### **270-4 D Method of Sale and Engine Fuel Quality Requirements for Hydrogen**

**Source:** Western Weights and Measures Association (WWMA)

**Proposal:** The proposal is to add a Informational item to the 2008 - 2009 L&R agenda for method of sale and engine fuel quality requirements for hydrogen in NIST Handbook 130 (HB 130) to address gaseous hydrogen refueling applications. Note: There is a corresponding proposal to add a draft Hydrogen Gas Measuring Devices Code in NIST HB 44 to address requirements for hydrogen gas refueling equipment.

**Background:** Twenty-four states have hydrogen refueling dispensers in operation. Hydrogen stations using permanent and mobile refueling systems for automobiles, fleet vehicles (buses), forklifts, airport totes, are increasing and may go unnoticed. Many stakeholders who are not familiar with the weights and measures standards process will need to participate at this stage rather than after this is a commercial application. This effort by the U.S. National Work Group (USNWG) for the Development of Commercial Hydrogen Measurement Standards is to ensure there are appropriate standards and test procedures in place in time for dispenser manufacturers, service agencies, and officials, and to educate the general public, not if, but when retail hydrogen applications become commercially available.

Existing codes do not fully address hydrogen refueling applications because of hydrogen's properties and other technical differences in the setup and operations of dispensing systems. The development of legal metrology standards for newly emerging hydrogen technology is a necessary component of the hydrogen infrastructure. The

weights and measures community must have time to consider requirements for hydrogen-refueling systems before this application is available for public access at corner service stations.

The USNWG is bringing the proposal before the weights and measures community to share this information about upcoming standards for an emerging technology. The simultaneous development of the code and corresponding test procedures will allow for input from the W&M and hydrogen communities, appropriate trials of the standards, and to address all areas of concerns early in the standards development process.

This item was reviewed at the WWMA and SWMA 2008 Annual Meeting and at the NEWMA 2008 Interim Meeting. NEWMA members generally discussed the “hydrogen issue” and its usage in the marketplace. It is anticipated that hydrogen at first will be relegated to “fleet vehicles” (such as CNG), and that retail sales will be slow in coming to the marketplace. NEWMA recommends that this item remain a Developing item.

At the 2009 Interim and Annual Meetings, the NIST Technical Advisor briefed the Committee on work that the USNWG Fuels Specifications Subcommittee (FSS) has done to date (refer to Appendix J).

**Recommendation:** The USNWG FSS presented the following December 2008 recommendation for consideration by the 2009 NCWM Laws and Regulations Committee.

## **Section 2. Non-food Products** <sup>[Note 1, page 103]</sup>

### **2.XX. Retail Sales – Hydrogen Fuel (H).**

#### **2.XX.1. Definitions – Hydrogen Fuel (H).**

##### **2.XX.1.1. Hydrogen Fuel. – A fuel composed of the chemical hydrogen intended for consumption in an internal combustion engine or fuel cell.**

The symbol for hydrogen vehicle fuel shall be the capital letter “H” (the word Hydrogen may also be used.)

##### **2.XX.2. Method of Retail Sale and Dispenser Labeling. – All hydrogen fuel kept, offered, or exposed for sale and sold at retail shall be in terms of the kilogram.**

#### **2.XX.3. Retail Dispenser Labeling.**

##### **2.XX.3.1. A computing dispenser must display the unit price in whole cents on the basis of price per kilogram.**

##### **2.XX.3.2. The service pressure(s) of the dispenser must be conspicuously shown on the user interface in bar or the SI Unit of Pascal (Pa) (e.g., MPa).**

##### **2.XX.3.3. The product identity must be shown in a conspicuous location on the dispenser.**

##### **2.XX.3.4. National Fire Protection Association (NFPA) labeling requirements also apply.**

##### **2.XX.3.5. Hydrogen shall be labeled in accordance with 16 CFR 309 – FTC Labeling Alternative Fuels.**

#### **2.XX.4. Street Sign Prices and Advertisements.**

##### **2.XX.4.1. The unit price must be in terms of price per kilogram in whole cents (e.g., \$3.49 per kg, not \$3.499 per kg).**

##### **2.XX.4.2. The sign or advertisement must include the service pressure(s) at which the dispenser(s) delivers hydrogen fuel (e.g., H35 or H70<sub>MPa</sub>).**

**FSS supports the proposed new definitions to address gaseous hydrogen refueling applications.**

**1. Specification for Hydrogen Fuel for Internal Combustion Engines and Fuel Cells**

**2. Definitions**

**1.XX. Fuel Cell. – an electrochemical device used to convert hydrogen and oxygen into electrical energy to power a motor vehicle.**

**1.XX. Hydrogen Fuel. – a fuel composed of the chemical hydrogen intended for consumption in an internal combustion engine or fuel cell.**

**1.XX. Internal Combustion Engine. – a device used to ignite hydrogen in a confined space to create mechanical energy to power a motor vehicle.**

Proposed Specification for Hydrogen Fuel

The FSS identified several quality criteria where there was tentative agreement with their associated values (see properties 6, 7, 8, 9, 12, 14, and 16 which are highlighted in green) in the proposed Table 1. Hydrogen Fuel Quality Specification. When a quality property and numerical value (defining a maximum or minimum limit) is added to the specification, appropriate test methods must then be identified. As test methods are identified and adopted by the FSS they will be added to column 6 in Table 1. The FSS did not agree on all of the properties contained in the DMS proposal because there was either not enough research data or test methods available to support a decision (see properties 1, 2, 3, 4, 5, 10, 11, 13, and 15 which are highlighted in yellow) in Table 1 below. These and perhaps other properties will receive further consideration by the FSS and may be added to the quality standard in the future when such action is supported by research.

Table 1. Hydrogen Fuel Quality Specification*					
	Property	Value	Unit	Limit	Test Method(s)
1	Ammonia	0.1	ppm v/v	Maximum	to be specified
2	Carbon Dioxide	2	ppm v/v	Maximum	to be specified
3	Carbon Monoxide	0.2	ppm v/v	Maximum	to be specified
4	Formaldehyde	0.01	ppm v/v	Maximum	to be specified
5	Formic Acid	0.2	ppm v/v	Maximum	to be specified
6	Helium	300	ppm v/v	Maximum	to be specified
7	Hydrogen Fuel Index	99.97	% (a)	Minimum	to be specified
8	Nitrogen and Argon	100	ppm v/v	Maximum	to be specified
9	Oxygen	5	ppm v/v	Maximum	to be specified
10	Particulate Concentration	1	µg/L@NTP (b)	Maximum	to be specified
11	Particulates Size	10	µm	Maximum	to be specified
12	Total Gases	300	ppm v/v (c)	Maximum	to be specified
13	Total Halogenated Compounds	0.05	ppm v/v	Maximum	to be specified
14	Total Hydrocarbons	2	ppm v/v (d)	Maximum	to be specified
15	Total Sulfur Compounds	0.004	ppm v/v	Maximum	to be specified
16	Water	5	ppm v/v	Maximum	to be specified

Footnotes to Table 1 –

a. Hydrogen fuel index is the value obtained with the value of total gases (%) subtracted from 100 %.

b. Particulate Concentration is stated as µg/L@NTP = micrograms per liter of hydrogen fuel at 0 °C and at one atmosphere pressure (1 bar).

c. Total Gases = Sum of all impurities listed on the table except particulates.

d. Total Hydrocarbons may exceed 2 ppm v/v only due to the presence of methane, provided that the total gases do not exceed 300 ppm v/v.

\*The FTC's Fuel Rating Rule (16 CFR Part 309) see the requirements in "Labeling of Alternative Fuels" at [www.ftc.gov/bcp/edu/pubs/business/autos/bus29.shtm](http://www.ftc.gov/bcp/edu/pubs/business/autos/bus29.shtm) requires dispensers to bear an declaration of minimum percent of hydrogen determined according to test methods described in "Standard Test Method for Analysis of Natural Gas by Gas Chromatography" (ASTM D1946).

Additional information on this hydrogen proposal and the corresponding hydrogen gas measuring devices code can be found at [ts.nist.gov/WeightsAndMeasures/Developing-Commercial-Hydrogen-Measurement-Standards.cfm](http://ts.nist.gov/WeightsAndMeasures/Developing-Commercial-Hydrogen-Measurement-Standards.cfm). For additional information on this item, contact Lisa Warfield at [lisa.warfield@nist.gov](mailto:lisa.warfield@nist.gov) or (301) 975-3308.

## 270-5 I National Fisheries Institute – Net Weight Issues

**Discussion/Background:** Lisa Weddig, Director of Regulatory and Technical Affairs at the National Fisheries Institute (NFI) gave a presentation (see Appendix K) to the Committee and at the open hearings at the 2009 Interim Meeting in Daytona, Florida. NFI is a trade association representing the seafood industry. Their membership consists of the industry from harvesters, U.S. processors, importers, to retail and food service operations. In 2006 their members voted to start an initiative called the Better Seafood Bureau. The mission of the Bureau is to address the growing problem in the industry of economic fraud. There are areas that have been identified as being particularly egregious and harmful to those in the industry trying to do the right thing. The three identified areas are species substitution, avoiding duties in the transshipment of product from one country to another, and inaccurate net weight and counts.

NFI would like to find a feasible and efficient manner to interact with the state weights and measures programs to address the net weight issue. It was suggested by the states that NFI notify the state Directors when an issue arises in their state. NFI was also encouraged to work with NCWM to further develop this item.

At the 2009 Annual Meeting in San Antonio, Texas, the Technical Advisor announced that NIST held a Seafood Forum meeting on May 28, 2009, in Gaithersburg, Maryland, to discuss the problem and solutions to short net weight fraud occurring in the seafood industry. The meeting was a collaborative effort attended by 30 participants representing federal agencies, state weights and measures officials, trade associations and industry representatives. The purpose of the meeting was to achieve three primary objectives: 1) to clearly define the problem and economic impact from short net weight fraud, 2) to provide understanding of each agency's role, responsibility, authority, enforcement, and oversight of seafood and net content compliance, and 3) to develop a plan for clear and immediate action and solutions to slow down and stop the problem of short weighing and to maintain the public's trust in the regulatory system.

Judy Cardin, Wisconsin, will be taking the lead on coordinating follow-up meetings with state and federal agencies to discuss enforcement issues.

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Joe Gomez, New Mexico, Chairman

Joe Benavides, Texas

Jonelle Brent, Illinois

John Gaccione, New York

Terence McBride, Tennessee

Ron Hayes, Missouri, Chairman FALS

Doug Hutchinson, Canada, Technical Advisor

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## **Laws and Regulations Committee**