Report of the Laws and Regulations Committee

Vicky Dempsey, Chairperson
Montgomery County, Ohio

200 INTRODUCTION

This is the report of the Laws and Regulations Committee (hereinafter referred to as the "Committee") for the 93rd 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 Items marked "**W**" have been withdrawn from consideration.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, 2008 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.

Subject Series

Table A
Index to Reference Key Items

Table B
Appendices

Table C
Voting Results

Reference Key Number	*House of State Representatives*		*House of Delegates*		*Results*
	Yeas	*Nays*	*Yeas*	*Nays*	
223-1	37	0	35	0	Passed
232-2	34	2	31	2	Passed
237-1 (amendment)	37	0	34	1	Passed
237-1 (includes amendment)	36	1	35	0	Passed
250-1	38	0	38	1	Passed

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

223 UNIFORM ENGINE FUELS, PETROLEUM PRODUCTS, AND AUTOMOTIVE LUBRICANTS INSPECTION LAW (EFL)

223-1 V Revision of the Uniform Engine Fuels, Petroleum Products and Automotive Lubricants Inspection Law

(This item was adopted)

Source: Fuels and Lubricants Subcommittee (formerly the Petroleum Subcommittee)

Background/Discussion: Since 2007 the FALS Subcommittee had met at all Interim and Annual Meetings and other various times to carry out the revision of the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law and Regulation in HB 130. At the 2007 WWMA and SWMA meetings and at the 2008 CWMA and NEWMA annual regional meetings, all regions supported this item. In advance of the 2008 Interim Meeting, the Subcommittee distributed their report to the Committee, state Weights and Measures Directors and other stakeholders for review. Written comments received on this item are in Appendix B. At the 2008 Interim Meeting, the Fuels and Lubricants Subcommittee (FALS) presented a proposed revision of the Engine Fuels, Petroleum Products and Automotive Inspection Law. The Subcommittee reviewed the Engine Fuels, Petroleum Products and Automotive Lubricants Regulation and prepared a draft revision (refer to 237-1 below). At the 2008 Annual Meeting there were no additional comments on this item.

Recommendations: The Subcommittee recommended the title of the uniform law be amended by deleting "petroleum products" (also delete the definition) so the title reflects the growing use of alternative and renewable fuels in the marketplace. Other proposed amendments will add additional power to provide the Director with authority to review records and grant waivers to specific requirements in the event of an emergency or national disaster. Editorial revisions were also made to update several references and to reflect the name change of the Society of Automotive Engineers to SAE International.

The Subcommittee recommended that an "active" standard be the current, official version of an ASTM standard. An "active" standard supersedes the previous historical versions of a standard. Both "active" and "historical" versions are published at www.astm.org or by mail ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pennsylvania 19428-2959. See the proposal for details on other recommended changes.

Ron Hayes, FALS Chairperson, can be contacted at (573) 751-2922 or at ron.hayes@mda.mo.gov.

Committee Recommendation: Adopt the revised Uniform Fuels and Automotive Lubricants Law as presented in the following text.

Uniform Engine Fuels~~, Petroleum Products~~ and Automotive Lubricants Inspection Law

As adopted by
The National Conference on Weights and Measures*

1. Background

In 1984, the National Conference on Weights and Measures adopted a section in the Uniform Regulation for the Method of Sale of Commodities requiring that motor fuel containing alcohol be labeled to disclose to the retail purchaser that the fuel contains alcohol. The delegates deemed this action necessary since motor vehicle manufacturers were qualifying their warranties with respect to some gasoline-alcohol blends, motor fuel users were complaining to weights and measures officials about fuel quality and vehicle performance, and the ASTM International had not yet finalized quality standards for oxygenated (which includes alcohol-containing) fuels. While many argued that weights and measures officials should not cross the line from quantity assurance programs to programs regulating quality, the delegates were persuaded that the issue needed immediate attention.

A Motor Fuels Task Force was appointed in 1984 to develop mechanisms for achieving uniformity in the evaluation and regulation of motor fuels. The Task Force developed the Uniform Motor Fuel Inspection Law and the Uniform Motor Fuel Regulation (see the Uniform Regulations section of this handbook) to accompany the law. The recommended law required registration and certification of motor fuel as meeting ASTM standards. It established a motor fuel quality testing capability by the state. Funding for the installation and support of the testing facility was established by a fee per liter or per gallon on all fuel marketed within the state.

In 1992, the NCWM established the Petroleum Subcommittee under the Laws and Regulations Committee. The Subcommittee recommended major revisions to the law that was adopted at the 80th NCWM in 1995. The scope of the law was expanded to include all engine fuels, petroleum products, and automotive lubricants, and its title was changed accordingly. Other changes included expansion of the definitions section, limitation of the scope of the registration section to engine fuels designed for special use, and addition of sections on administrative and civil penalties and on criminal penalties.

In 2007 the Petroleum Subcommittee (now referred to as the Fuels and Lubricants Subcommittee) undertook a review of this uniform law to update it to eliminate reference to "petroleum products" and reflect the addition of new engine fuels to the marketplace. The amendments included new provisions to provide officials with the authority to review delivery records and grant waivers of requirements adopted under the law in times of emergency or natural disasters.

At the 2008 NCWM Interim Meeting, the Laws and Regulations Committee changed the Petroleum Subcommittee's name to the Fuels and Lubricants Subcommittee (FALS) in recognition of its work with a wide variety of fuels including petroleum and biofuels.

2. Status of Promulgation

The current Uniform Fuels and Automotive Lubricants Inspection Law was recommended for adoption by the Conference in ~~1995~~**2008**. The table beginning on page 10 shows the status of adoption of the law.

* *The National Conference on Weights and Measures is supported by the National Institute of Standards and Technology in partial implementation of its statutory responsibility for "cooperation with the states in securing uniformity in weights and measures laws and methods of inspection."*

Uniform Engine Fuels~~, Petroleum Products~~ and Automotive Lubricants Inspection Law

Section 1. Purpose

There should be uniform requirements for engine fuels, ~~**petroleum products**~~ **non-engine fuels**, and automotive lubricants among the states. This Act provides for the establishment of quality specifications for these products.
(Amended 2008)

Section 2. Scope

The Act establishes a sampling, testing, and enforcement program, provides authority for fee collection, requires registration of engine fuels, and empowers the state to promulgate regulations as needed to carry out the provisions of the Act. It also provides for administrative, civil, and criminal penalties.

Section 3. Definitions

As used in this act:

3.1. Engine Fuel. – any liquid or gaseous matter used for the generation of power in an internal combustion engine.

3.2. Director. – the _____ of the Department of _____ and designated agents.

3.3. Person. – an individual, corporation, company, society, association, partnership, or governmental entity.

3.4. ASTM International (www.astm.org) – an international voluntary consensus standards organization formed for the development of standards on characteristics and performance of materials, products, systems, and services, and the promotion of related knowledge.

~~**3.5. Petroleum Products. – 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.**~~

3.~~6~~5. Automotive Lubricants. – any material interposed between two surfaces that reduces the friction or wear between them.

3.~~7~~6. Engine Fuel Designed for Special Use. – engine fuels designated by the Director requiring registration. These fuels normally have no ASTM or other national consensus standards applying to their quality or usability; common special fuels are racing fuels and those intended for agricultural and other off-road applications.

3.~~8~~7. Sold. – kept, offered, or exposed for sale.

3.8. Non-engine Fuels. – any liquid or gaseous matter used for the generation of heat, power, or similar uses.
(Added 2008)

Section 4. Administration, Adoption of Standards, and Rules

The provisions of this Act shall be administered by the Director. For the purpose of administering and giving effect to the provisions of this Act, the specification and test method standards set forth in the most recent ~~**edition**~~ **version available** ~~**of the Annual Book of ASTM standards and supplements thereto, and revisions thereof**~~ **of ASTM International standards as published on its website (www.astm.org)** are adopted, except as amended or modified, as required by the Director to comply with federal and state laws. When no ASTM standard exists, other generally recognized national consensus standards may be used. The Director is empowered to write rules and regulations on the advertising, posting of prices, labeling, standards for, and identity of fuels~~**, petroleum products,**~~ **non-engine fuels,** and automotive lubricants and is authorized to establish a testing laboratory.

(Amended 2008)

Section 5. General Duties and Powers

The Director shall have the authority to:

5.1. Enforce and administer all the provisions of this Act by inspections, analyses, and other appropriate actions.

5.2. Have access during normal business hours to all places where engine fuels, ~~**petroleum products,**~~ **non-engine fuels** and automotive lubricants are kept, transferred, offered, exposed for sale, or sold for the purpose of examination, inspection, taking of samples, **and review of fuel storage, receipts, transfers, sales records or delivery records for determining compliance with this Act.** If such access is refused by the owner, agent, or other persons leasing the same, the Director may obtain an administrative search warrant from a court of competent jurisdiction.

(Amended 2008)

5.3. Collect, or cause to be collected, samples of engine fuels, ~~**petroleum products,**~~ **non-engine fuels** and automotive lubricants marketed in this state, and cause such samples to be tested or analyzed for compliance with the provisions of this Act.

(Amended 2008)

5.4. Define engine fuels for special use and refuse, revoke, suspend, or issue a stop-order if found not to be in compliance and remand stop-order if the engine fuel for special use is brought into full compliance with this Act.

5.5. Issue a stop-sale order for any engine fuel, ~~**petroleum product,**~~ **non-engine fuels** and automotive lubricant found not to be in compliance and remand a stop-sale order if the engine fuel, petroleum product, or automotive lubricant is brought into full compliance with this Act.

(Amended 2008)

5.6. Refuse, revoke, or suspend the registration of an engine fuel, petroleum product, or automotive lubricant.

5.7. Delegate to appropriate personnel any of these responsibilities for the proper administration of this Act.

5.8. The director is empowered to waive specific state requirements adopted under this Act or may establish alternative requirements for fuels as determined to be necessary in the event of an emergency or a natural disaster for a specified period of time.

(Added 2008)

Section 6. Registration of Engine Fuels Designed for Special Use

All engine fuels designed for special use must be registered with the Director. Such registration shall include:

6.1. Name, brand, or trademark under which the fuel will be sold.

6.2. Name and address of person registering the engine fuel.

6.3. The special use for which the engine fuel is designed.

6.4. A certification, declaration, or affidavit stating the fuel specifications.

Section 7. Inspection Fee

There shall be a fee of $_____ per appropriate unit of measure on all products covered under the scope of this Act marketed within this state for the purposes of administering and effectively enforcing the provisions of this Act.

Section 8. Prohibited Acts

It shall be unlawful to:

8.1. Represent engine fuels, ~~**petroleum products**~~ **non-engine fuels**, or automotive lubricants in any manner that may deceive or tend to deceive the purchaser as to the nature, brand, price, quantity, and/or quality of such products.
(Amended 1996 **and 2008**)

8.2. Fail to register an engine fuel designed for special use.

8.3. Submit incorrect, misleading, or false information regarding the registration of an engine fuel designed for special use.

8.4. Hinder or obstruct the Director in the performance of the Director's duties.

8.5. Represent an engine fuel, ~~**petroleum product**~~ **non-engine fuels**, or automotive lubricant that is contrary to the provisions of this Act.
(Amended 2008)

8.6. Represent automotive lubricants with an SAE International viscosity grade or API (American Petroleum Institute) service classification other than those specified by the intended purchaser.
(Added 1996)

Section 9. Civil Penalties

9.1. Assessment of Penalties. – Any person who, by himself or herself, by his or her servant or agent, or as the servant or agent of another person commits any of the acts enumerated in Section 22 may be assessed by the _____ a civil penalty of:

a. not less than $ _____ nor more than $_____ for a first violation,

b. not less than $_____ nor more than $_____ for a second violation within ____ from the date of the first violation, and

c. not less than $_____ nor more than $_____ for a third violation within ____ from the date of the first violation.

9.2. Administrative Hearing. – Any person subject to a civil penalty shall have a right to request an administrative hearing within _____ days of receipt of the notice of the penalty. The director or his/her designee shall be authorized to conduct the hearing after giving appropriate notice to the respondent. The decision of the director shall be subject to appropriate judicial review.

9.3. Collection of Penalties. – If the respondent has exhausted his or her administrative appeals and the civil penalty has been upheld, he or she shall pay the civil penalty within ___ days after the effective date of the final decision. If the respondent fails to pay the penalty, a civil action may be brought by the director in any court of

competent jurisdiction to recover the penalty. Any civil penalty collected under this Act shall be transmitted to _____.

Section 10. Criminal Penalties

10.1. Misdemeanor. – Any person who violates any provision of this Act or regulations promulgated thereto shall be guilty of a Class ___ misdemeanor and upon conviction shall be punished by a fine of not less than $_____ nor more than $_____, or imprisonment for not less than ___ nor more than ___ or both.

10.2. Felony. – Any person who intentionally violates any provision of this Act or regulations promulgated thereto or is convicted under the misdemeanor provisions of this section more than three times in a 2-year period shall be guilty of a Class _____ felony and upon conviction shall be punished by a fine of not less than $_____ nor more than $_____, or imprisonment for not less than _____ nor more than _____, or both.

Section 11. Restraining Order and Injunction

The Director is authorized to apply to any court of competent jurisdiction for a restraining order or a temporary or permanent injunction restraining any person from violating any provision of this Act.

Section 12. Severability Provisions

If any word, phrase, provision, or portion of this Act shall be held in a court of competent jurisdiction to be unconstitutional or invalid, the unconstitutionality or invalidity shall apply only to such word, phrase, provision, or portion, and for this purpose the provisions of this Act are declared to be severable.

Section 13. Repeal of Conflicting Laws

All laws and parts of laws contrary to or inconsistent with the provisions of this Act are repealed except as to offense committed, liabilities incurred, and claims made thereunder prior to the effective date of this Act.

Section 14. Citation

This Act may be cited as the "Engine Fuels~~, Petroleum Products,~~ and Automotive Lubricants Inspection Act of _____."

(Amended 2008)

Section 15. Effective Date

This Act shall become effective on _____.

232 METHOD OF SALE REGULATION

232-1 I Automatic Temperature Compensation (ATC) for Petroleum Products

Background/Discussion: At the 2007 Annual Meeting, the Committee received eighteen comments requesting this item be made Informational to allow the Committee time for additional study and deliberation. The Committee believed that the concerns of the commentators were valid but that they were issues 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 if needed. 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 were against it would not be affected by the adoption of this method of sale because their laws prohibit it. The implementation of temperature compensation will be a slow process primarily because there is not an existing nationally approved temperature-compensation device, and NIST Handbook 44 must be revised to set forth the specifications, tolerances, and other technical requirements for this technology. NTEP will then need to undertake its work where needed. The Committee acknowledged that some states may move ahead with their own type approvals to allow temperature compensation. The majority of the Committee believed that 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.

At the 2008 Interim Meeting, 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 written comments (see Appendix A). 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 that they 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 was 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 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 is 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 CEC panel plans to publish preliminary staff findings and recommendations. Two members requested that this item be developed to assist states in which ATC is prohibited by a state law or regulation.

The Government Accountability Office (GAO) is actively working on a study on ATC. GAO submitted the following statement to the NCWM since they were not able to attend the 2008 Annual NCWM Meeting.

At the request of the Chairman of the House Committee on Science and Technology, the United States Government Accountability Office (GAO) is conducting a review of the issues surrounding automatic temperature compensation in the retail sales of motor vehicle fuels. This fall the GAO plans to release a report that provides information on 1) the views of stakeholders on the costs related to the use of automatic temperature compensation devices; 2) who would bear the costs of implementation and the support for those views; 3) other factors that might affect the decision of whether or not to install such devices; and 4) the reasons some states and nations have promoted or rejected implementation of automatic temperature compensation. In its work GAO has or will interview stakeholders including state, federal, and international officials as well as representatives of industry and consumer organizations.

The Committee will continue to monitor the progress of the CEC and GAO studies. The Committee agrees with the majority of the comments that the cost and benefits of temperature compensation at the retail level are still unknown. The members unanimously agreed that further information is needed before a proposal for a temperature compensation method of sale can be considered by the NCWM. For the reasons detailed above and in the written comments (see Appendix A), this item was kept in Informational status.

Information on the consideration of this item by the Regional Associations following the NCWM Annual Meeting in July 2007 is presented below.

Central Weights and Measures Association (CWMA): At the Central 2008 Annual Meeting, the Committee recommended that this item remain Informational. The Committee 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."

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. (The full report is available at www.ncwm.net/central/lr/lr_2007_interim.doc.)

…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 which 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.

Northeastern Weights and Measures Association (NEWMA): 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 in which ATC is prohibited by state law or regulation. In the past, NEWMA had recommended a method of sale of gross gallons at retail only. NEWMA would like to have further development of the method of sale of gross gallons at retail. This item could possibly be reviewed separately.

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 which 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.

Western Weights and Measures Association (WWMA): The WWMA held its 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.

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 NIST WMD.)

> 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 gallons 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 gallons 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.

METHOD OF SALE PROPOSAL

The Method of Sale is presented in two parts. Part I includes a proposed method of sale developed by the NCWM Automatic Temperature Compensation Steering Committee (ATCSC). Part II includes the original recommendation for a method of sale developed by the Committee at the 2007 Interim Meeting. Part II was not adopted at the 2007 NCWM Annual Meeting.

Part I. 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 considered the following discussion points in forming a proposal for the Method of Sale Regulation:

1. Permissive vs. Mandatory ATC

In cold climates, voluntary introduction of ATC can be fairly successful. In regions where fuel temperatures average below 60 °F, a retailer who implements ATC could lower the unit price while maintaining the same profit margin. This acts as an enticement for retailers to take that step. Conversely, in regions where fuel temperatures average above 60 °F, retailers would find it necessary to raise the unit price to maintain profit margins. As a result, it could be expected that under a permissive implementation, cooler regions will see implementation of ATC, while warmer climates will not. In regions where there is no definite advantage one way or the other, it is possible that consumers will find price and quantity comparisons impossible between retail outlets that compensate and outlets that do not.

The preamble to the Method of Sale Regulation states, "The purpose of this regulation is to require accurate and adequate information about commodities so that purchasers can make price and quantity comparisons." The

ATCSC is convinced that introduction of ATC in the marketplace without making ATC mandatory is in direct conflict with the purpose of the regulation. Therefore, the ATCSC proposal provides a transition to ATC where the equipment is made available, followed by a period of time when ATC may be implemented (turned on), followed by a date when ATC would be mandatory. The timeline for this transition should provide a reasonable timeframe for natural replacement of the majority of dispensers in the country.

It is unclear whether ATC would provide a cost savings to U.S. consumers. The ATCSC believes we must make this decision based on facts and data. ATC is a superior method of measurement that provides a higher degree of transparency in unit pricing. With mandatory ATC at retail, consumers would have assurance that, no matter where they choose to purchase motor fuel, the price stated represents a gallon at 60 °F. This level of transparency does not exist in a gross gallon market or a permissive ATC market.

2. Referencing 60 °F and 15 °C

The ATCSC realized that the difference between 60 °F and 15 °C is relevant and must be rectified. Testimony disclosed that many international markets have established 60 °F as the reference temperature. This practice is also implemented throughout the U.S. distribution of petroleum products. One option is to only reference 60 °F, but this approach conflicts with the NCWM's commitment to acknowledge the metric system. To balance the need to recognize the metric system without disrupting the current marketing practices throughout the production and distribution system in the United States, the ATCSC recommends referencing 60 °F with the metric equivalent of 15.56 °C. The ATCSC proposes the use of 60 °F (15.56 °C) as the reference temperature for both gallons and liters to maintain a common reference temperature in the United States when both gallons and liters are used. However, the ATCSC recognizes that when liters are used as the volume measurement unit in other countries, then the reference temperature of 15 °C is used. The ATCSC recommends that other parties provide input to the NCWM committees on this subject for further discussion.

3. Establish Standardized Product Densities for Calculating Volume Correction Factors

To implement ATC for retail motor fuel, there must be an agreement on product densities to be used in volume correction factors. In late July 2007, the ATCSC conducted an outreach to accumulate data on the densities for various products falling under ASTM Committee D02 standards across the United States. Outreach went to weights and measures jurisdictions, the Alliance of Automobile Manufacturers, and the American Petroleum Institute. The ATCSC also considered standard densities used in Canada for temperature compensation. The ATCSC set out to use this data to develop a single set of standard densities to be used throughout the country for volume correction factors. Details of this item can be reviewed in the reports of the ATCSC, which are available at www.ncwm.net on the Internet.

There was much discussion whether to reference standard density as Canada has done, or reference standard API gravity as is done throughout much of the U.S. petroleum market. Ultimately, the ATCSC has opted to reference standardized API gravity for the following products based on the density data it has reviewed.

- 62 API for gasoline, including ethanol blends up to E10
- 37 API for No. 2 diesel, including biodiesel blends up to B20

More data are needed to determine standard densities for additional products such as No. 1 diesel and higher blends of biodiesel and ethanol.

4. Disclosure – Street Signs, Dispensers, Receipts or Invoices, and Other Advertisements

Based on comments the ATCSC received, the following issues were considered regarding disclosure when ATC is in use.

- Terminology needs to be uniform to assist consumer recognition.
- Disclosure on street signs must be prominent to be seen and not too wordy to allow for easy recognition by motorists while operating their vehicles.
- Disclosure on the dispenser should be near the display of volume delivered.

- Any other advertising of unit price for motor fuel should also disclose if it represents the price of temperature compensated volume.
- Examples were provided of disclosure labeling for dispensers in Canada for the ATCSC's consideration.

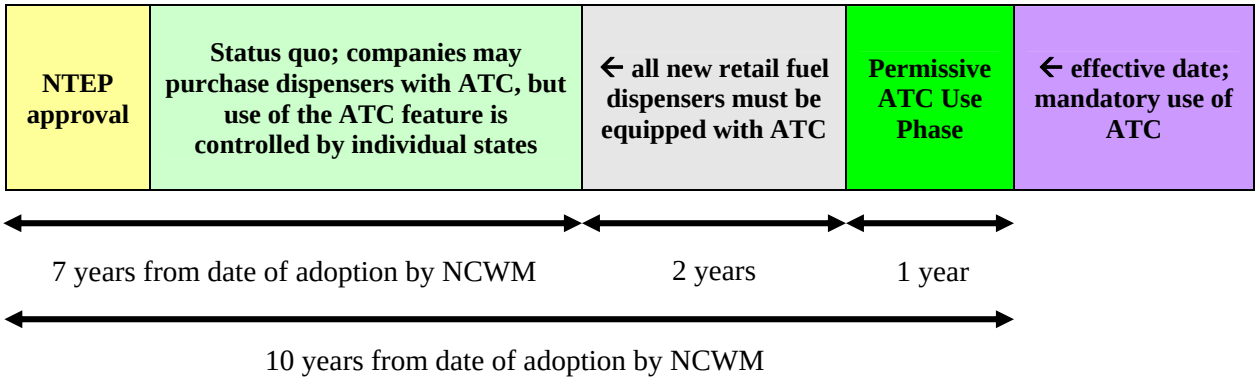
The ATCSC recommends a simple, uniform, and prominent display of "ATC" on street signs. It will eventually become understood and recognized by motorists. For disclosure on dispensers, receipts, or invoices, the ATCSC recommends the statement, "Volume Corrected to 60 °F." This follows the model found in Canada and seems to be clear and concise.

5. Implementation

Following the August 27 - 29, 2007, meeting of the ATCSC, its members suggested several options that could be considered to address the implementation of ATC in the United States. The ATCSC discussed different proposals and comments made at the meetings of the regional weights and measures associations on this subject. The ATCSC is not charged with endorsing or opposing the implementation of ATC at retail; it is tasked with addressing issues associated with the implementation of ATC. The proposal will also allow ATCSC to assist NCWM membership in coming to consensus on the issue. Hence, the ATCSC discussed the various options again and has decided to recommend a single option to the NCWM's Specifications and Tolerances Committee and Laws and Regulations Committee for consideration.

The recommended option is shown below.

Implementation Option:



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 allowed. This approach would 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 would be unable to use the feature after having purchased it. This requirement should be placed in NIST Handbook 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 recommended 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. Time is needed

to activate the ATC capability in dispensers equipped with ATC and to allow service companies and weights and measures officials to test the accuracy of dispensers equipped with ATC.

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 Handbook 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 federal class action suits currently pending.

Alternative Proposal for a Method of Sale for Engine Fuels and Non-Engine Fuels

Source: The NCWM Automatic Temperature Compensation Steering Committee (ATCSC).

2.31. Engine Fuels and Non-Engine Fuels.

2.31.1. Definitions.

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

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

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

2.31.1.4. Net volume – the volume after temperature correction.

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

2.31.2. Quantity.

2.31.2.1. Quantity, Wholesale Transactions.

(a) All engine fuels and non-engine fuels shall 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 60 °F (15.56 °C) in liters or gallons or barrels.

(b) Effective January 1, 200X, 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 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 2.31.X. or based on the actual measured density of the fuel and using reference tables specified in Table 2.31.X.

(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 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.

2.31.2.2. Quantity, Retail Transactions.

(a) Effective January 1, 2XXX, all engine fuels and non-engine fuels identified in Table 2.31.X 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 60 °F (15.56 °C) in liters or gallons.

(b) Effective January 1, 2XXX, all engine fuels and non-engine fuels identified in Table 2.31.X shall be sold, offered, or exposed for sale to retail customers in terms of liquid volume automatically temperature corrected to 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 2.31.X.

(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 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."

Table 2.31.X. Reference Tables and Fuel Densities for Temperature Correction		
Fuel	**Reference Table for Wholesale or Retail Temperature Correction**	**Standard Fuel Density for Retail Transactions (optional density for wholesale transactions)**
Gasoline, gasoline-oxygenate blends (3.7 mass % oxygen, max.), gasoline ethanol blends (10 vol. %, max.)	**API Table 6b.**	**62 API (730 kg/m^3)**
Diesel Fuel (grade 2-D), biodiesel blends (20 vol. % biodiesel, max)	**API Table 6b.**	**37 API (840 kg/m^3)**
Other fuels TBD	**–**	**–**

(Added 200X)

Part II. Permissive Temperature Compensation for Refined Petroleum Products and Other Fuels

(The following text describes the original proposal which was returned to the Committee after it was not adopted at the 2007 NCWM Annual Meeting.)

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

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 such as 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 91st NCWM Annual Meeting (2006) on the Internet at 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 2007" (Spring 2008).

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 supported the need for an improvement in 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.

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 ATC Steering Committee at 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 American.* 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 for the NCWM to adopt a standard that would provide guidance to states considering legislation in this area. This action would support 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 are no retail motor-fuel dispensers available with Certificates of Conformance that included temperature-compensation functions.

The following topics/considerations were addressed by the Committee:

1. Temperature Compensation was Already Legal for Use in Trade Unless Prohibited by State or Local Requirements.

The Committee was aware that temperature compensation was already required or permitted in a number of states for vehicle-tank meters, liquefied petroleum gas, and wholesale deliveries to retailers, and that it had been used in the marketplace in these applications for decades. At the WWMA Annual Meeting, the State of California reported that for transactions involving 5000 gal or more, purchasers may request temperature compensation; Idaho said that for transactions involving 8000 gal or more, the purchaser had an option to buy, on a yearly basis, temperature-compensated product and that all terminal transactions were temperature compensated; Arizona responded that any transactions involving more than 5000 gal must be compensated for temperature; and currently Hawaii is the only jurisdiction that has taken some action to account for temperature variations in retail sales. The Committee heard enough supportive comments from a broad base of weights and measures directors, inspectors, and metrologists to

recognize that temperature compensation may find broad acceptance in the marketplace, especially once the potential benefits it offers were realized and implementation costs fall.

The Committee also believed that unless prohibited by state law, temperature compensation at retail dispensers is already legal in most states. Additionally, the Committee believed it would be difficult to argue against a measurement practice that could only improve the accuracy and reproducibility of a volumetric measurement. The Committee position was that legal metrology must not stand in the way of the marketplace striving to change the way fuels and other products are marketed and sold.

2. Under a Permissive Approach Consumers and Businesses Will Decide Where and When to Implement Temperature Compensation.

The Committee was convinced the marketplace will best determine where and when the benefits from temperature compensation should be implemented to improve accuracy. The Committee recommended the adoption of a method of sale that would allow temperature compensation to be used in sales of petroleum products on a permissive (voluntary) basis, allowing the marketplace (e.g., industry, consumers, and other government agencies) to decide if and when it was appropriate to use temperature compensation in specific commercial applications (e.g., sales at truck stops). This recommendation was proposed solely for the purpose of ensuring the delivery of an accurate volume of petroleum at a specific reference temperature. It was not the intent of the Committee to attempt to define a standard energy content of a liter or gallon of gasoline or other engine fuel with this recommendation.

3. Temperature Compensation Would be Permissive, But Controlled.

Although the Committee's recommendation allowed for permissive use of temperature compensation, it included mandatory provisions requiring compensation be made by automatic means to ensure that the measured quantity is accurately determined. It also defined a temperature-compensated volume for both liters and gallons, requiring the posting of information on dispensers, street signs, and on documents to ensure full disclosure and fair competition. Additionally, it required a business location to have all of the devices operating on temperature compensation on a year-round basis unless a written waiver was granted by the Director.

4. The Basis of the Committee's Recommendation Was the Proposal from the WWMA.

The Committee's recommendation was based on the proposal submitted by the WWMA, which was developed at its 2006 Annual Meeting in Salt Lake City, Utah. The Committee made several amendments to the proposal, but found it represented a well-reasoned foundation for the recommendation presented below. The CWMA L&R Committee supported the WWMA's proposal and supported submitting it to the NCWM for a vote. The CWMA agreed with the WWMA that temperature compensation, which is currently utilized at every step of distribution except for retail sales is the most equitable method of sale. Additionally, the CWMA believed the proposal should not be restricted to petroleum products, but should also include alternative fuels such as E85, biodiesel and biodiesel blends. The Committee's recommendation incorporated some of the CWMA's suggestions and included additional requirements to address many of the concerns raised at the 2007 NCWM Interim Meeting open hearings and discussions. For the purpose of this recommendation, the Committee used the definition for "refined petroleum products" as presented in Handbook 130 Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law which reads, "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," with the understanding that its intent was that the requirements would also apply when petroleum was blended with other products such as ethanol.

5. Full Disclosure Will Allow Informed Consumers to Make Value Comparisons.

The Committee believes that consumers, when educated through marketing and outreach efforts, will accept new technology and measurement practices. When provided with sound information, consumers will gain confidence that government oversight will prevent deceptive practices. The Committee believes that full disclosure provisions of the method of sale will reduce both unfair competition and consumer confusion. If, for example, a truck stop offers temperature-compensated sales of diesel fuel through high-speed dispensers for truckers, the road signs with price per unit of volume (e.g., gallon or liter) and dispensers must include a declaration that the volume is sold on the basis of temperature compensation. If the price per gallon is higher or lower than the usual price per gallon,

consumers will be informed that the volume was compensated to a reference temperature. Several people expressed concern over marketplace confusion if diesel fuel is sold on the basis of both compensated and uncompensated volume. It is incorrect to say that there would be two methods of sale for the same product under this recommendation, just as it is inaccurate to say that some consumers will not receive a "full" gallon if temperature compensation is used, as some opponents to this method of sale have claimed. The reality is that consumers will be able to compare price per gallon between stations and they will receive a "full" gallon as defined under the Method of Sale of Commodities Regulation. While confusion is possible with any method of sale, the Committee was not deterred by that possibility. If confusion occurs, the proper response is to educate consumers and address any changes identified from the confusion through further refinement of the method of sale. In this application, full disclosure will inform consumers that one product is sold on the basis of temperature compensation and one is not. When consumers are educated, they can make sound value comparisons between these choices just as they already make decisions when choosing between different brand name products, octane ratings, additive offerings, and types of fuels. Business and industry is also well equipped and very experienced in educating its customers whenever they introduce new products or services to the marketplace. Should they decide to use the method of sale, they should be sure to introduce it using an informative marketing effort.

The Committee was urged to clarify that there may be situations in which there is a valid contract where the price is based on the fuel being sold on the basis of uncompensated measurement. The Committee agreed with the comment that if a purchaser operating under such a contract fills up at a location where the dispensers are temperature compensated, the contract should prevail in those transactions. Similarly, the American Petroleum Institute (API) said that the Committee should permit either uncompensated or compensated methods of sale at loading-rack meters when such sales are under contract. The Committee believes its proposal will not interfere with the contracts or understandings that API described.

6. Costs

The Committee heard from some users that the lack of temperature compensation was costing them great sums of money, while industry representatives said the cost of equipment and installation will cost industry and, ultimately, consumers even larger amounts of money. The cost of any NCWM action is a concern to the Committee, which must defend its actions on both sides of any issue. However, it is very difficult to give each side everything it wants in any recommendation. While the Committee was concerned about cost, it was skeptical of the economic claims from both sides in this debate. For example, at the 2007 Interim Meeting one estimate of the cost of implementing temperature compensation dropped nearly two billion dollars once industry learned that an alternative technology was available in the marketplace.

That example is but one illustration of the weaknesses the Committee saw in cost or damage claims over the years. The issue dates back to the Committee's work in the 1990s on the price verification procedures where some groups claimed that supermarkets were overcharging consumers billions of dollars a year. The Committee never saw data that supported such claims; yet the damage values received wide notice in the media. Some members of the NCWM may remember the claims made during Congressional consideration of the Metric Conversion Act of 1975 that changing to the metric system would cost billions of dollars. In reality those high costs never materialized, which was confirmed through several reliable studies. One reason Congress made conversion to the metric system voluntary was to allow industry to make changes as part of their normal equipment replacement cycle. The automotive industry, for instance, found it cost effective to make the change to metric units when purchasing replacement equipment. Advancements in technology also made conversions easier or allowed dual-unit displays on equipment as standard features. These factors were key contributors in reducing costs.

Each State Director in the NCWM, not the Committee, determines whether or not to incorporate what is adopted by the NCWM into his state law or regulations. Even states that adopt the Method of Sale of Commodities Regulation by reference or citation can take action to exclude a specific section of a uniform regulation that conflicts with other requirements or policies. As for taking time for additional study, the NCWM record on consideration of the issue of temperature compensation dates back to the mid-1970s and has arisen for consideration every few years since then. The Committee was aware of the history, the issues, the various points of view, and the potential costs of temperature compensation, and believed it was time for the NCWM to move forward on temperature compensation by establishing standards by which this method of sale can be brought into the marketplace on a voluntary, yet

controlled, basis. The Committee also heard that no action should be taken pending further studies. The Committee was wary of calls for no action pending another study or action by Congress.

As one speaker alluded to in his presentation, the marketplace is to some degree "intelligent" in that it helps address many factors through its price-setting function and can generally be trusted to balance costs and prices as well as justify investment in new technology and marketing practices if there is a need, demand, or opportunity. A voluntary approach will allow early adopters to develop experience and pull advances in technology into the equipment market while competition and other factors will reduce costs even further if the method of sale is broadly adopted. The Committee believed a permissive approach to temperature compensation turned the choice over to the marketplace where, if consumer demand was sufficient, sellers would make a business decision to invest in the technology and marketing according to the new method of sale when the benefits offset costs.

7. Limiting the Option of Temperature Compensation to Specific Applications

The Committee received suggestions that temperature compensation be limited to certain applications or not allowed in retail sales, but it did not hear sufficient justification for taking such positions. Temperature compensation is not new to the commercial measurement system. It is widely used in wholesale transactions in many jurisdictions, and consumers in many states have purchased LPG and oil for heating and other uses for decades on the basis of temperature-compensated sales. No information was presented to the Committee indicating that its use in those applications has been anything but successful. The Committee recognizes that verifying devices with temperature compensation may require additional inspection time and require weights and measures officials to purchase thermometers or other equipment for testing. However, those factors are not sufficient justification to prohibit the marketplace from implementing this method of sale. If a jurisdiction adopts this method of sale and a business decides to use temperature compensation, the weights and measures agency would need to obtain funding to implement appropriate testing procedures to verify devices. However, the Committee would expect that innovation, risk-based testing, and random sampling techniques, as well as technology, would lessen the time required to conduct additional tests, just as those factors have reduced the burden of testing many weighing and measuring instruments in the past.

8. Permissive vs. Mandatory Implementation

The Committee heard from the regional associations and others that temperature-compensated sales should be implemented on a permissive basis. The Committee opposed the inclusion of a future mandatory date at this time. The Committee believed temperature-compensated sales should be market driven and that suppliers will conduct sales on a compensated basis when consumers demand it and should not be required to do so before then. The Committee, based on the comments of many jurisdictions, believed the imposition of a mandatory requirement was too burdensome on the industry, requiring upgrades and possibly the replacement of many meters without adequate justification.

The Committee agreed that a mandatory requirement would not be justified at this point in time. The Committee felt it was important to get some form of regulation regarding temperature-compensated sales of petroleum into Handbook 130 and thought as many barriers as possible should be removed in order to achieve that goal. Although the Committee's recommendation is a permissive requirement for temperature-compensated sales, the Committee was willing to consider establishing future mandatory dates if a justified need was demonstrated after this permissive regulation was implemented and used for a period of time.

9. 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 eighteen jurisdictions that indicated they automatically adopt that regulation by reference or citation (see 2008 Edition of NIST Handbook 130, "II 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 rulemaking typically 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. Arizona actually forbids the practice; however, the Committee did not address that issue in the following recommendation. The Committee considered whether 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 either 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.

Committee Recommendation: Amend the Method of Sale of Commodities Regulation in Handbook 130 by adding a new Section 2.30. Refined Petroleum Products:

2.30. Refined Petroleum Products – Permissive Temperature Compensation.

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

2.30.2. 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 gallons with the delivered volume adjusted to 60 °F;

(b) Temperature compensation must be accomplished through automatic means.

2.30.3. Full Disclosure Requirements.

2.30.3.1. 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;

2.30.3.2. 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.

2.30.4. Other Provisions.

2.30.4.1. 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).

2.30.4.2. 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^3 at a reference temperature of 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.**

232-2 V Biodiesel Labeling

(This item was adopted)

Source: Central Weights and Measures Association (CWMA) (See Item 232.3 in the Report of the 92nd Annual NCWM Meeting in 2006)

Committee Recommendation: Add Section 3.15. "Biodiesel Labeling," which is presented in the proposed revision to the Engine Fuels and Automotive Lubricants Regulation in Item 237-1, to the Method of Sale of Commodities Regulation.

2.31. Biodiesel and Biodiesel Blends.

2.31.1. Identification of Product. – Biodiesel shall be identified by the term "Biodiesel" ~~followed~~ with the designation "B100." Biodiesel ~~b~~Blends shall be identified by the term "Biodiesel Blend."

2.31.2. Labeling of Retail Dispensers.

2.31.2.1. Labeling of Grade Required. – Biodiesel shall be identified by the grades S15 or S500. Biodiesel Blends shall be identified by the grades No. 1-D, No. 2-D, or No. 4-D.

2.31.2.2. EPA Labeling Requirements Also Apply. – Retailers and wholesale purchaser-consumers of biodiesel blends shall comply with EPA pump labeling requirements for sulfur under 40 CFR § 80.570.

2.31.2.3. Automotive Fuel Rating. – Biodiesel and Biodiesel Blends shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

2.31.2.4. Biodiesel Blends. – When Biodiesel Blends greater than 20 % by volume are offered by sale, each side of the dispenser where fuel can be delivered shall have a label conspicuously placed that states "Consult Vehicle Manufacturer Fuel Recommendations."

The lettering of this legend shall not be less than 6 mm (¼ in) in height by 0.8 mm ($^1/_{32}$ in) stroke; block style letters and the color shall be in definite contrast to the background color to which it is applied.

2.31.3. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, a declaration of the volume percent biodiesel on an invoice, bill of lading, shipping paper, or other document. This documentation is for dispenser labeling purposes only; it is the responsibility of any potential blender to determine the amount of biodiesel in the diesel fuel prior to blending.

2.31.4. Exemption. – Biodiesel Blends that contain less than or equal to 5 % biodiesel by volume are exempt from the requirements of Sections 2.31.1, 2.31.2, and 2.31.3. when it is sold as diesel fuel.

(Added 2008)

~~**2.31.2. Containing Between More Than 5 % and Up To and Including 20 % Biodiesel. – Each retail dispenser of biodiesel blend containing more than 5 % and up to and including 20 % biodiesel shall be labeled with either:**~~

~~**2.31.2.1. The capital letter "B" followed by the numerical value representing the volume percentage of biodiesel fuel and ending with "biodiesel blend." (e.g., B10 biodiesel blend; B20 biodiesel blend), or;**~~

~~**2.31.2.2. The phrase "biodiesel blend between 5 % and 20 %" or similar words.**~~

~~**2.31.3. Labeling of Retail Dispensers Containing Biodiesel Blend More Than 20 % Biodiesel. – Each retail dispenser of biodiesel blend containing more than 20 % biodiesel shall be labeled with the capital letter "B" followed by the numerical value representing the volume percentage of biodiesel fuel and ending with "biodiesel blend." (e.g., B60 biodiesel blend).**~~

~~**2.31.4. Additional Labeling Requirements. – The dispenser shall be labeled with "Consult Manufacturer fuel recommendations."**~~

~~**2.31.5. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, with a declaration of the volume percent biodiesel on an invoice, bill of lading, shipping paper, or other document. This documentation is for dispenser labeling purposes only; it is the responsibility of any potential blender to determine the amount of biodiesel in the diesel fuel prior to blending.**~~

~~**2.31.6. Exemption. – Biodiesel blends containing 5 % or less biodiesel by volume are exempted from the requirements of Sections 2.31.1. through 2.31.5.**~~

~~**(Added 200X)**~~

Background/Discussion: The Committee does not believe this proposal will impose any new requirements. However, by including these requirements in the Method of Sale of Commodities Regulation, the Committee is obligated to give notice that the requirements will become effective on January 1 of the year following adoption in the eighteen jurisdictions which indicate they automatically adopt that regulation by reference or citation (see the 2008 Edition of NIST Handbook 130, "II Uniformity of Laws and Regulations" [page 9] for a list of those states). These requirements have already been adopted and are published in the Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in Handbook 130.

Section 2.20. within the Method of Sale of Commodities Regulation in Handbook 130, currently contains requirements for the disclosure of oxygenates in gasoline blends. Included are requirements for the disclosure of biodiesel and biodiesel blends and consistent practices that should be required to ensure consumers are fully informed when making purchasing decisions.

The Committee received numerous comments in support of this item and heard from the National Biodiesel Board (NBB) that, in general, supported this item. However, the NBB requested the Committee keep this item on its agenda as an Informational item until ASTM finalizes its biodiesel specifications. Waiting for the ASTM biodiesel standard before moving this item forward for a vote will ensure there is no conflict with those specifications.

At its 2006 Annual Meeting, the WWMA L&R Committee received no comments regarding this item. The WWMA supported the NBB request to keep this item as Informational pending ASTM action. The WWMA concurred that waiting for adoption of the ASTM specifications will prevent conflicts in the final labeling requirement for biodiesel. At a recent CWMA meeting, a few comments were received that the biodiesel label requirement should include percentages below 5 %. An update on activity within ASTM to develop a stability specification for B100 was provided. After negative votes were addressed, ballots were circulated to add a B5 limit to the D975 diesel specification and to establish a B20 specification.

At the 2007 Interim Meeting, the CWMA and others recommended the Committee keep this proposal on hold until ASTM finalized its work on the biodiesel blend specifications. In response to those suggestions, the Committee agreed to separate this item from the Fuel Ethanol requirements and carried this item forward as an Informational item. At the Annual Meeting, several people called for this item to be presented for a vote at the 2008 Annual Meeting and asked the Petroleum Subcommittee to encourage all stakeholders to move quickly to resolve their concerns so this important consumer protection requirement can be adopted by the NCWM.

Information on the consideration of this item by the Regional Associations following the NCWM Annual Meeting in July 2007 is presented below.

At the fall 2007 meetings of the CWMA and NEWMA and the WWMA meeting, a representative from the National Biodiesel Board expressed support for the item as presented. The CWMA and SWMA recommended that additional labeling be required for fuels containing more than 5 % biodiesel and the dispenser be labeled with "Consult manufacturer fuel recommendations."

The CWMA also recommended the following wording:

> **2.XX.2. Labeling of Retail Dispensers Containing More Than 5 % and Up To and Including 20 % Between 5 % and 20 % Biodiesel. – Each retail dispenser of biodiesel blend containing more than 5 % and up to and including 20 % biodiesel shall be labeled with either:**

The SWMA recommends that the proposal be amended based on discussions with the Fuel and Lubricants Subcommittee at the NCWM Annual Meeting. The Subcommittee is working on further revisions to this section and recommendations. The following language is being considered to require additional labeling for fuels containing more than 5 % biodiesel: The dispenser shall be labeled with "Consult manufacturer fuel recommendations".

2.XX. Biodiesel.

2.XX.1. Identification of Product. – Biodiesel shall be identified by the term "Biodiesel" followed with the designation "B100." Biodiesel blends shall be identified by the term "Biodiesel Blend."

At the 2008 Interim Meeting, the Committee learned that the Federal Trade Commission (FTC) would publish a similar biodiesel labeling regulation later this summer. The Committee will work with the Fuels and Lubricants Subcommittee to ensure that this item is revised and consistent with the FTC requirements.

At the CWMA 2008 Annual Meeting it was mentioned that the language should not conflict with the finalized language that will be issued by FTC. A member of the National Biodiesel Board (NBB) commented that he sent comments to FTC opposing the inclusion of "biomass" in the label. A regulatory official also opposed the exemption for fuels containing 5 % or less biodiesel. An industry representative requested that this item be made Informational, since retailers may not be able to identify the percentage of biodiesel blended due to a lack of disclosure through the chain of distribution. This representative would support the following language "may contain up to 5 %."

At the NEWMA 2008 Annual Meeting, the Association agreed that the language should not conflict with the finalized language from FTC. A state Director recommended changing the term "retailer" to the word "purchaser." The Director believes that the buyer/purchaser should be provided, at the time of delivery a declaration of the maximum volume percent of the product purchased. NEWMA also was opposed to the disclosure exempting fuels containing 5 % or less biodiesel. There was concern that warranties on motor vehicles may be voided due to the mixing of fuel that contains less than 5 % biodiesel with other fuels. There was also concern regarding the chain of custody of fuels for the purpose of enforcement. Issues would be minimized when a buyer knows that the maximum of 5 % biodiesel disclosure requirements are in place and provided by a seller. The Committee would like to review the final FTC proposal and to see if any information is distributed after the FALS meeting in Vancouver, Canada in June 2008.

On July 11, 2008, FTC released its final rule (Federal Register/Vol, 73, No. 134, Friday July 11, 2008, [40154-40165]). The Fuels and Lubricants Subcommittee worked on language similar to the FTC language for the biodiesel and biodiesel blends. At the 2008 Annual Meeting, the Committee heard comments regarding the lack of regulation for blends that contain less than 5 % biodiesel. However, labeling for blends less than 5 % was not necessary because the ASTM standard requires this type of product to meet requirements for diesel fuel. The FALS representative reported that biodiesel is frequently added to diesel fuel in concentrations up to 2 % to increase lubricity.

237 ENGINE FUELS, PETROLEUM PRODUCTS AND AUTOMOTIVE LUBRICANTS INSPECTION REGULATION

237-1 V Revision of the Engine Fuels, Petroleum Products and Automotive Lubricants Inspection Regulation

(This item was adopted)

Source: Fuels and Lubricants Subcommittee (FALS) (formerly the Petroleum Subcommittee)

Background/Discussion: The Subcommittee recommends the title of the uniform regulation be amended by deleting reference to petroleum products (and the related definition) to recognize the use of alternative and renewable fuels in the marketplace. Editorial revisions were also made to reflect the name change of the Society of Automotive Engineers to SAE International. The ASTM International standard identification was also changed to be consistent with that now used by ASTM by deleting the space between the letter and number of a standard throughout the regulation (e.g., D 4814 is shown as D4814). Among the other proposed changes is a revised definition for Reformulated Fuels and new definitions for "Lubricant" and "MTBE." The addition of a second ASTM International standard for Aviation Gasoline is also proposed. A change in Section 3.3. "Diesel Fuel" is recommended so that the regulation acknowledges EPA dispenser labeling requirements. Additional information is proposed for other sections to either clarify or correct references to other standards. The Subcommittee is recommending that E85 dispensers bear a label to encourage consumers to consult their engine manufacturer's recommendations on the appropriate fuel to use in their vehicle and amendments to the M85 labeling requirements are also suggested. There is a new subsection proposed for Section 4 to provide requirements for Dispenser Filters. The Subcommittee could not agree on a variety of proposed revisions to Section 2.1. Proposed changes have been submitted for the Committee to consider as a separate item and are presented in Item 237-2 in this agenda.

Ron Hayes, FALS Chairperson, can be contacted at (573) 751-2922 or at ron.hayes@mda.mo.gov.

The Subcommittee met on January 24, 2007, at the Interim Meeting in Jacksonville, Florida, to undertake a review of a number of significant issues related to fuel standards. One of its first projects was a review of the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in NIST Handbook 130. The goal of the Subcommittee was to prepare a draft revision of this regulation for consideration by the Committee at the 2008 Interim Meeting. The Subcommittee also reviewed the Engine Fuels, Petroleum Products, and Automotive Lubricants Law, and a draft revision of the law is presented in Item 223-1 above.

The Subcommittee met at the 2007 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 Meeting in Phoenix, Arizona, and held a conference call on January 15, 2008, in order to complete its work on the draft revisions of the law and regulation that it presented to the L&R Committee at the NCWM 2008 Interim Meeting.

At the 2008 Interim Meeting, the Fuels and Lubricants Subcommittee presented their final update of the Engine Fuels, Petroleum Products and Automotive Inspection Regulation. The Subcommittee had met various times throughout the year either in person or by teleconference. In advance of the Interim Meeting, they distributed their report to the Committee, state Weights and Measures Directors, and other stakeholders for review and comment. Some comments were received during the public hearing and in writing (see Appendix B).

At the CWMA 2008 Annual Meeting a comment was made by an industry representative that refiners cannot meet the minimum vapor pressure requirements referenced in ASTM D5798 (specification for E85). ASTM is aware of this issue and is working on this specification.

At the NEWMA 2008 Annual Meeting there was question on the wording under Section 4.3. The Committee agreed that this section should be in sub-sets for clarification.

Committee Recommendation: Adopt the revised Uniform Fuels and Automotive Lubricants Law as presented in the following text:

Uniform Engine Fuels ~~Petroleum Products~~ and Automotive Lubricants Regulation

as adopted by
The National Conference on Weights and Measures*

1. Background

In 1984, the National Conference on Weights and Measures (NCWM)[1] adopted a Section 2.20. in the Uniform Regulation for the Method of Sale of Commodities requiring that motor fuels containing alcohol be labeled to disclose to the retail purchaser that the fuel contains alcohol. The delegates deemed this action necessary since motor vehicle manufacturers were qualifying their warranties with respect to some gasoline-alcohol blends, motor fuel users were complaining to weights and measures officials about fuel quality and vehicle performance, and ASTM International (ASTM) had not yet finalized quality standards for oxygenated (which includes alcohol-containing) fuels. While a few officials argued weights and measures officials should not cross the line from quantity assurance programs to programs regulating quality, the delegates were persuaded that the issue needed immediate attention.

A Motor Fuels Task Force was appointed in 1984 to develop mechanisms for achieving uniformity in the evaluation and regulation of motor fuels. The Task Force developed the Uniform Motor Fuel Inspection Law (See the ~~Uniform Motor~~ **Uniform Engine Fuels and Automotive Lubricants Inspection** Law section of this handbook) and the Uniform ~~Motor Fuel~~ **Engine Fuel and Automotive Lubricants** Regulation to accompany the law. The Uniform Law required registration and certification of motor fuel as meeting ASTM standards. The regulation defined the ASTM standards to be applied to motor fuel.

In 1992 the NCWM established the Petroleum Subcommittee under the Laws and Regulations Committee. The Subcommittee recommended major revisions to the Regulation that was adopted at the 80th NCWM in 1995. The scope of the regulation was expanded to include all engine fuels, petroleum products, and automotive lubricants; its title was changed accordingly; and the fuel specifications and method of sale sections were revised to address the additional products. Other changes included expansion of the definitions section and addition of sections on retail storage tanks, condemned product, registration of engine fuels designed for special use, and test methods and reproducibility limits.

In 2007 the Petroleum Subcommittee (now referred to as the Fuels and Lubricants Subcommittee) undertook a review of this regulation to update it by eliminating reference to "petroleum products" and to reflect the addition of new engine fuels to the marketplace.

At the 2008 NCWM Interim Meeting the Laws and Regulations Committee changed the Petroleum Subcommittee's name to the Fuels and Lubricants Subcommittee (FALS) in recognition of its work with a wide variety of fuels including petroleum and biofuels.

2. Status of Promulgation

The Uniform Regulation for Engine Fuels~~, Petroleum Products,~~ and Automotive Lubricants was adopted by the NCWM in 1995 **and the latest amendments were proposed in 2008.** The status of state actions with respect to this regulation is shown in the table beginning on page 10.

* *The National Conference on Weights and Measures is supported by the National Institute of Standards and Technology in partial implementation of its statutory responsibility for "cooperation with the states in securing uniformity in weights and measures laws and methods of inspection."*

Uniform Engine Fuels~~, Petroleum Products,~~ and Automotive Lubricants Regulation

Section 1. Definitions

1.1. ASTM International (ASTM). – **the** international voluntary consensus standards organization formed for the development of standards on characteristics and performance of materials, products, systems, and services, and the promotion of related knowledge **(www.astm.org)**.

1.2. Antiknock Index (AKI). – the arithmetic average of the Research Octane Number (RON) and Motor Octane Number (MON): AKI = (RON+MON)/2. This value is called by a variety of names, in addition to antiknock index, including: octane rating, posted octane, (R+M)/2 octane.

1.3. Automatic Transmission Fluid. – a product intended for use in a passenger vehicle, other than a bus, as either a lubricant, coolant, or liquid medium in any type of fluid automatic transmission that contains a torque converter. For the purposes of this regulation, fluids intended for use in continuously variable transmissions are not considered "Automatic Transmission Fluid."

(Added 2004)

1.4. Automotive Fuel Rating. – the automotive fuel rating required under the amended Octane Certification and Posting Rule (or as amended, the Fuel Rating Rule), 16 CFR Part 306. Under this Rule, sellers of liquid automotive fuels, including alternative fuels, must determine, certify, and post an appropriate automotive fuel rating. The automotive fuel rating for gasoline is the antiknock index (octane rating). The automotive fuel rating for alternative liquid fuels consists of the common name of the fuel, along with a disclosure of the amount, expressed as a minimum ~~**percentage by**~~ volume **percent** of the principal component of the fuel. For alternative liquid automotive fuels, a disclosure of other components, expressed as a minimum ~~**percentage by**~~ volume **percent**, may be included, if desired.

1.5. Automotive Gasoline, Automotive Gasoline-Oxygenate Blend. – a type of fuel suitable for use in spark-ignition automobile engines and also commonly used in marine and non-automotive applications.

1.6. Aviation Gasoline. – a type of gasoline suitable for use as a fuel in an aviation spark-ignition internal combustion engine.

1.7. Aviation Turbine Fuel. – a refined middle distillate suitable for use as a fuel in an aviation gas turbine internal combustion engine.

1.8. Base Gasoline. – all components other than ethanol in a blend of gasoline and ethanol.

1.9. Biodiesel. – a fuel comprised of mono-alkyl esters of long chain fatty acids derived from vegetable oils or animal fats, designated B100.

1.10. Biodiesel Blend. – a fuel comprised of a blend of biodiesel fuel with petroleum-based diesel fuel, designated BXX. In the abbreviation BXX, the XX represents the volume percentage of biodiesel fuel in the blend.

~~**1.11. Cetane Index. approximation of the cetane number of distillate diesel fuel, which does not contain a cetane improver additive, calculated from the density and distillation measurements.**~~

~~**1.12**~~**1.11. Cetane Number.** – a numerical measure of the ignition performance of a diesel fuel obtained by comparing it to reference fuels in a standardized engine test.

~~**1.13.**~~ **1.12. Compressed Natural Gas (CNG).** – natural gas which has been compressed and dispensed into fuel storage containers and is suitable for use as an engine fuel.

~~**1.14.**~~ **1.13. Denatured Fuel Ethanol.** – "ethanol" as defined in Section 1.20.

~~1.15.~~**1.14. Diesel Fuel.** – a refined middle distillate suitable for use as a fuel in a compression-ignition (diesel) internal combustion engine.

~~1.16.~~**1.15. Distillate.** – any product obtained by condensing the vapors given off by boiling petroleum or its products.

~~1.17.~~**1.16. EPA.** – the United States Environmental Protection Agency **(www.epa.gov)**.

~~1.18.~~**1.17. E85 Fuel Ethanol.** – a blend of ethanol and hydrocarbons of which the ethanol portion is nominally 85 to 75 volume percent denatured fuel ethanol.

~~1.19.~~**1.18. Engine Fuel.** – any liquid or gaseous matter used for the generation of power in an internal combustion engine.

~~1.20.~~**1.19. Engine Fuels Designed for Special Use.** – engine fuels designated by the Director as requiring registration. These fuels normally do not have ASTM or other national consensus standards applying to their quality or usability; common special fuels are racing fuels and those intended for agricultural and other off-road applications.

~~1.21.~~**1.20. Ethanol.** – (also known as "Denatured Fuel Ethanol") a nominally anhydrous ethyl alcohol meeting ASTM D4806 standards. It is intended to be blended with gasoline for use as a fuel in a spark-ignition internal combustion engine. The denatured fuel ethanol is first made unfit for drinking by the addition of the **Alcohol and Tobacco Tax and Trade Bureau (TTB) (www.ttb.gov)** ~~**Bureau of Alcohol, Tobacco and Firearms (BATF)**~~ approved substances before blending with gasoline.

~~1.22.~~**1.21. Fuel Oil.** – a refined oil middle distillates, heavy distillates, or residues of refining, or blends of these, suitable for use as a fuel for heating or power generation, the classification of which shall be defined by ASTM D396.

~~1.23.~~**1.22. Gasoline.** – a volatile mixture of liquid hydrocarbons generally containing small amounts of additives suitable for use as a fuel in a spark-ignition internal combustion engine.

~~1.24.~~**1.23. Gasoline-Alcohol Blend.** – a fuel consisting primarily of gasoline and a substantial amount (more than 0.35 mass percent of oxygen, or more than 0.15 mass percent of oxygen if methanol is the only oxygenate) of one or more alcohols.

~~1.25.~~**1.24. Gasoline Gallon Equivalent (GGE).** – gasoline gallon equivalent (GGE) means 2.567 kg (5.660 lb) of natural gas.

~~1.26.~~**1.25. Gasoline Liter Equivalent (GLE).** – gasoline liter equivalent (GLE) means 0.678 kg (1.495 lb) of natural gas.

~~1.27.~~**1.26. Gasoline-Oxygenate Blend.** – a fuel consisting primarily of gasoline along with a substantial amount (more than 0.35 mass percent of oxygen, or more than 0.15 mass percent of oxygen if methanol is the only oxygenate) of one or more oxygenates.

~~1.28.~~**1.27. Gear Oil.** – an oil used to lubricate gears, axles, or some manual transmissions.

(Added 2004)

~~1.29.~~**1.28. Kerosene.** – (or "Kerosine") a refined middle distillate suitable for use as a fuel for heating or illuminating, the classification of which shall be defined by ASTM D3699.

~~1.30.~~**1.29. Lead Substitute.** – an EPA-registered gasoline additive suitable, when added in small amounts to fuel, to reduce or prevent exhaust valve recession (or seat wear) in automotive spark-ignition internal combustion engines designed to operate on leaded fuel.

~~1.31.~~**1.30. Lead Substitute Engine Fuel.** – for labeling purposes, a gasoline or gasoline-oxygenate blend that contains a "lead substitute."

~~1.32.~~**1.31. Leaded.** – for labeling purposes, any gasoline or gasoline-oxygenate blend which contains more than 0.013 g of lead per liter (0.05 g lead per U.S. gal). NOTE: EPA defines leaded fuel as one which contains more than 0.0013 g of phosphorus per liter (0.005 g per U.S. gal), or any fuel to which lead or phosphorus is intentionally added.

~~1.33.~~**1.32. Liquefied Natural Gas (LNG).** – natural gas that has been liquefied at -126.1 °C (-259 °F) and stored in insulated cryogenic tanks for use as an engine fuel.

~~1.34.~~**1.33. Liquefied Petroleum Gas (LPG).** – a mixture of normally gaseous hydrocarbons, predominantly propane, or butane, or both, that has been liquefied by compression or cooling, or both to facilitate storage, transport, and handling.

~~**1.35. Low Sulfur. – low sulfur diesel fuel that meets ASTM D975 (e.g., Grade Low Sulfur No. 1-D or Grade Low Sulfur No. 2-D) standards. Diesel Fuel containing higher amounts of sulfur for off-road use is defined by EPA regulations.**~~

~~1.36.~~**1.34. Low Temperature Operability.** – a condition which allows the uninterrupted operation of a diesel engine through the continuous flow of fuel throughout its fuel delivery system at low temperatures. Fuels with adequate low temperature operability characteristics have the ability to avoid wax precipitation and clogging in fuel filters.

(Added 1998) (Amended 1999)

1.35. Lubricant. – means "oil." (See 1.41 below)

~~1.37.~~**1.36. Lubricity.** – a qualitative term describing the ability of a fluid to affect friction between, and wear to, surfaces in relative motion under load.

(Added 2003)

~~**1.38. M100 Fuel Methanol. – means nominally anhydrous methyl alcohol, generally containing small amounts of additives, suitable for use as a fuel in a compression-ignition internal combustion engine.**~~

~~1.39.~~**1.37. M85 Fuel Methanol.** – a blend of methanol and hydrocarbons of which the methanol portion is nominally 70 to 85 volume percent.

~~1.40.~~**1.38. Motor Octane Number.** – a numerical indication of a spark-ignition engine fuel's resistance to knock obtained by comparison with reference fuels in a standardized ASTM D2700 Motor Method engine test.

~~1.41.~~**1.39. Motor Oil.** – an oil that reduces friction and wear between the moving parts within a reciprocating internal combustion engine and also serves as a coolant. For the purposes of this regulation, "vehicle motor oil" refers to a motor oil which is intended for use in light- to heavy-duty vehicles including cars, sport utility vehicles, vans, trucks, buses, and off-road farming and construction equipment. For the purposes of this regulation, "recreational motor oil" refers to a motor oil which is intended for use in four-stroke cycle engines used in motorcycles, ATVs, and lawn and garden equipment. For the purposes of this regulation, motor oil also means engine oil.

(Added 2004)

1.40. MTBE. – methyl *tertiary*-butyl ether.

~~1.42.~~**1.41. Oil.** – motor oil, engine oil, and/or gear oil.

(Added 2004)

~~1.43.~~**1.42. Oxygen Content of Gasoline.** – the percentage of oxygen by mass contained in a gasoline.

~~1.44.~~**1.43. Oxygenate.** – an oxygen-containing, ashless, organic compound, such as an alcohol or ether, which can be used as a fuel or fuel supplement.

~~**1.45. Reformulated Gasoline. means a volatile mixture of liquid hydrocarbons and oxygenates meeting the reformulated gasoline requirements of the Clean Air Act Amendments of 1990 and suitable for use as a fuel in a spark-ignition internal combustion engine.**~~

~~1.45.~~**1.44. Reformulated Gasoline *(RFG)*. – a gasoline or gasoline-oxygenate blend certified to meet the specifications and emission reduction requirements established by the Clean Air Act Amendments of 1990, (as amended by the Energy Policy Act of 2005), required to be sold for use in automotive vehicles in extreme and severe ozone non-attainment areas and those areas which opt to require reformulated gasoline.**

(Amended 2008)

~~1.46.~~**1.45. Research Octane Number.** – a numerical indication of a spark-ignition engine fuel's resistance to knock obtained by comparison with reference fuels in a standardized ASTM D2699 Research Method Engine Test.

~~1.47.~~**1.46. SAE. (SAE International)** ~~**means the Society of Automotive Engineers**~~ a technical organization for engineers, scientists, technicians, and others in positions that cooperate closely in the engineering, design, manufacture, use, and maintainability of self-propelled vehicles.

~~1.48.~~**1.47. Substantially Similar.** – the EPA's "Substantially Similar" rule, Section 211(f)(1) of the Clean Air Act [42 U.S.C. 7545 (f)(1)].

~~1.49.~~**1.48. Thermal Stability.** – the ability of a fuel to resist the thermal stress which is experienced by the fuel when exposed to high temperatures in a fuel delivery system. Such stress can lead to formation of insoluble gums or organic particulates. Insolubles (e.g., gums or organic particulates) can clog fuel filters and contribute to injector deposits.

(Added 1998) (Amended 1999)

~~**1.50. Total Alcohol. means the aggregate total in volume percent of all alcohol contained in any fuel defined in this Chapter.**~~

~~**1.51. Total Oxygenate. means the aggregate total in volume percent of all oxygenates contained in any fuel defined in this Chapter.**~~

~~1.52.~~**1.49. Unleaded.** – **when used** in conjunction with "engine fuel" or "gasoline" means any gasoline or gasoline-oxygenate blend to which no lead or phosphorus compounds have been intentionally added and which contains not more than 0.013 g of lead per liter (0.05 g lead per U.S. gal) and not more than 0.0013 g of phosphorus per liter (0.005 g phosphorus per U.S. gal).

~~1.53.~~**1.50. Wholesale Purchaser Consumer.** – any person who is an ultimate gasoline consumer of fuel methanol, fuel ethanol, diesel fuel, biodiesel, fuel oil, kerosene, aviation turbine fuels, natural gas, compressed natural gas, or liquefied petroleum gas and who purchases or obtains the product from a supplier and receives delivery of that product into a storage tank.

(Added 1998) (Amended 1999)

Section 2. Standard Fuel Specifications~~.~~

2.1. Gasoline and Gasoline-Oxygenate Blends. – (as defined in this regulation) shall meet the following requirements:

2.1.1. ASTM or other requirements. – The most recent version of ASTM D4814, "Standard Specification for Automotive Spark-Ignition Engine Fuel," except that volatility standards for unleaded gasoline blended with

ethanol shall not be more restrictive than those adopted under the rules, regulations, and Clean Air Act waivers of the U.S. Environmental Protection Agency (which includes rules promulgated by the state). Gasoline blended with ethanol shall be blended under any of the following three options:

(a) The base gasoline used in such blends shall meet the requirements of ASTM D4814, or

(b) The blend shall meet the requirements of ASTM D4814, or

(c) The base gasoline used in such blends shall meet all the requirements of ASTM D4814 except distillation, and the blend shall meet the distillation requirements of the ASTM specification.

2.1.2. Blends of gasoline and ethanol shall not exceed the ASTM D4814 vapor pressure standard by more than 1.0 psi.

2.1.3. Minimum Antiknock Index (AKI). – The AKI shall not be less than the AKI posted on the product dispenser or as certified on the invoice, bill of lading, shipping paper, or other documentation;

2.1.4. Minimum Motor Octane Number. – The minimum motor octane number shall not be less than 82 for gasoline with an AKI of 87 or greater;

2.1.5. Minimum Lead Content to Be Termed "Leaded." – Gasoline and gasoline-oxygenate blends sold as "leaded" shall contain a minimum of 0.013 g of lead per liter (0.05 g per U.S. gal);

2.1.6. Lead Substitute Gasoline. – Gasoline and gasoline-oxygenate blends sold as "lead substitute" gasoline shall contain a lead substitute which provides protection against exhaust valve seat recession equivalent to at least 0.026 g of lead per liter (0.10 g per U.S. gal).

2.1.6.1. Documentation of Exhaust Valve Seat Protection. – Upon the request of the Director, the lead substitute additive manufacturer shall provide documentation to the Director that demonstrates that the treatment level recommended by the additive manufacturer provides protection against exhaust valve seat recession equivalent to or better than 0.026 g/L (0.1 g/gal) lead. The Director may review the documentation and approve the lead substitute additive before such additive is blended into gasoline. This documentation shall consist of:

(a) Test results as published in the Federal Register by the EPA Administrator as required in Section 211(f)(2) of the Clean Air Act; or

(b) Until such time as the EPA Administrator develops and publishes a test procedure to determine the additive's effectiveness in reducing valve seat wear, test results and description of the test procedures used in comparing the effectiveness of 0.026 g/L (0.1 g/gal) lead and the recommended treatment level of the lead substitute additive shall be provided.

2.1.7. Blending. – Leaded, lead substitute, and unleaded gasoline-oxygenate blends shall be blended according to the EPA "substantially similar" rule or an EPA waiver for unleaded fuel.

2.2. Diesel Fuel. – shall meet the most recent version of ASTM D975, "Standard Specification for Diesel Fuel Oils."

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 through 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 microns as determined by ASTM D6079. If an enforcement jurisdiction's single test of more than 560 microns is determined, a second test shall be conducted. If the average of the two tests is more than 560 microns, the sample does not conform to the requirements of this part.

(Amended 2003)

2.3. Aviation Turbine Fuels. – shall meet the most recent version of ASTM D1655, "Standard Specification for Aviation Turbine Fuels."

2.4. Aviation Gasoline. – shall meet the most recent version of **one of the following, as appropriate:**

(a) ASTM D910 "Standard Specification for Aviation Gasoline," **or**

(b) ASTM D6227 "Standard Specification for Grade 82 Unleaded Aviation Gasoline."

(Amended 2008)

2.5. Fuel Oils. – shall meet the most recent version of ASTM D396, "Standard Specification for Fuel Oils."

2.6. Kerosene (Kerosine). – shall meet the most recent version of ASTM D3699, "Standard Specification for Kerosine."

2.7. Ethanol. – intended for blending with gasoline shall meet the most recent version of ASTM D4806, "Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel."

2.8. Liquefied Petroleum (LP) Gases. – shall meet ASTM D1835, "Standard Specification for Liquefied Petroleum (LP) Gases."

NOTE: *Also reference Gas Processors Association 2140, "Liquefied Petroleum Gas Specification and Test Methods."*

2.9. Compressed Natural Gas (CNG). – shall meet the most recent version of SAE J1616, "Recommended Practice for Compressed Natural Gas Vehicle Fuel."

2.10. E85 Fuel Ethanol. – shall meet the most recent version of ASTM D5798, "Standard Specification for Fuel Ethanol (Ed75-Ed85) for Automotive Spark-Ignition Engines."

(Added 1997)

2.11. M85 Fuel Methanol. – shall meet the most recent version of ASTM D5797, "Standard Specification for Fuel Methanol M70-M85 for Automotive Spark Ignition Engines."

(Added 1997)

2.12. Motor Oil. – shall not be sold or distributed for use unless the product conforms to the following specifications:

(a) Performance claims listed on the label shall be evaluated against SAE J183, API 1509 Engine Oil Licensing and Certifications System, or other industry standards as applicable;

(b) The product shall meet its labeled viscosity grade specification as specified in the latest published version of SAE J300;

(c) Any engine oil that is represented as "energy conserving" shall meet the requirements established by the latest revision of SAE J1423.

(Added 2004)

2.13. Products for Use in Lubricating Manual Transmissions, Gears, or Axles. – shall not be sold or distributed for use in lubricating manual transmissions, gears or axles unless the product conforms to the following specifications:

(a) It is labeled with one or more of the service designations found in the latest revision of the SAE Information Report on axle and manual transmission lubricants, SAE J308, and API Publication 1560, and meets all applicable requirements of those designations;

(b) The product shall meet its labeled viscosity grade classification as specified in the latest published version of SAE J306;

(c) The product shall be free from water and suspended matter when tested by means of centrifuge, in accordance with the standard test ASTM D2273.

(Added 2004)

2.14. Products for Use in Lubricating Automatic Transmissions. – Any automatic transmission fluid sold without limitation as to type of transmission for which it is intended shall meet all automotive manufacturers' recommended requirements for transmissions in general use in the state. Automatic transmission fluids that are intended for use only in certain transmissions, as disclosed on the label of its container, shall meet the latest automotive manufacturers' recommended requirements for those transmissions. Adherence to automotive manufacturers' recommended requirements shall be based on tests currently available to the lubricants industry and the state regulatory agency. Any material offered for sale or sold as an additive to automatic transmission fluids shall be compatible with the automatic transmission fluid to which it is added, and shall meet all performance claims as stated on the label. Any manufacturer of any such product sold in this state shall provide, upon request by a duly authorized representative of the Director, documentation of any claims made on their product label.

(Added 2004)

2.15. Biodiesel. – B100 biodiesel intended for blending with diesel fuel shall meet the most recent version of ASTM D6751, Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels.

(Added 2004)

2.16. Biodiesel Blends. – Blends of biodiesel and diesel fuels shall meet the following requirements:

(a) Blends that contain less than or equal to 5 % must meet ASTM D975, Standard Specification for Diesel Fuel Oils;

(b) Blends greater than 5 % biodiesel and that contain less than or equal to 20 % by volume shall meet the most recent edition of ASTM D7467 Standard Specification for Diesel Fuel Oil, Biodiesel Blend (B6 to B20);

(c) Use of S15 biodiesel is required when blending into S15 low sulfur motor vehicle diesel fuel when the intention is to certify the fuel as S15 grade; and

(d) When blends greater than 20 % are offered for sale, the diesel fuel used in the blend shall meet the most current requirements of ASTM D975, Standard Specification for Diesel Fuel Oils and the biodiesel blend stock shall meet the specifications of 2.15. Biodiesel.

(Added 2004) **(Amended 2008)**

~~**(a) The base diesel fuel shall meet the most current requirements of ASTM D975, Standard Specification for Diesel Fuel Oils;**~~

~~**(b) The biodiesel blend stock shall meet the most current requirements of ASTM D6751, Standard Specification for Biodiesel Fuel (B100) Blend Stock for Distillate Fuels;**~~

~~**(c) Use of S15 biodiesel is required when blending into S15 low sulfur motor vehicle diesel fuel.**~~

(Added 2004) **(Amended 2008)**

Section 3. Classification and Method of Sale of Fuels and Automotive Lubricants

3.1. General Considerations.

3.1.1. Documentation. – When ~~**all products regulated by this rule gasoline, gasoline-oxygenate blends, reformulated gasoline, M85 and M100 fuel methanol, E85 and E100 fuel ethanol, liquefied petroleum (LP) gases, compressed natural gas, liquefied natural gas, biodiesel, diesel fuel, kerosene, aviation gasoline, aviation turbine fuels, or fuel oils**~~ are sold, an invoice, bill of lading, shipping paper or other documentation must accompany each delivery other than a retail sale. This document must identify the quantity, the name of the product, the particular grade of the product, the applicable automotive fuel rating, and oxygenate type and content (if applicable), the name and address of the seller and buyer, and the date and time of the sale. Documentation must be retained at the retail establishment for a period not less than 1 year.

(Amended 2008)

3.1.2. Retail Dispenser Labeling. – All retail dispensing devices must identify conspicuously the type of product, the particular grade of the product, and the applicable automotive fuel rating.

3.1.3. Grade Name. – The sale of any product under any grade name that indicates to the purchaser that it is of a certain automotive fuel rating or ASTM grade shall not be permitted unless the automotive fuel rating or grade indicated in the grade name is consistent with the value and meets the requirements of Section 2, Standard Fuel Specifications.

3.2. Automotive Gasoline and Automotive Gasoline-Oxygenate Blends.

3.2.1. Posting of Antiknock Index Required. – All automotive gasoline and automotive gasoline-oxygenate blends shall post the antiknock index in accordance with applicable regulations, 16 CFR Part 306 issued pursuant to the Petroleum Marketing Practices Act, as amended.

3.2.2. When the Term "Leaded" may be Used. – The term "leaded" shall only be used when the fuel meets specification requirements of paragraph 2.1.5.

3.2.3. Use of Lead Substitute must be Disclosed. – Each dispensing device from which gasoline or gasoline-oxygenate blends containing a lead substitute is dispensed shall display the following legend: "Contains Lead Substitute." The lettering of this legend shall not be less than ~~**12 mm**~~ **12.7 mm** (½ in) in height and the color of the lettering shall be in definite contrast to the background color to which it is applied.

3.2.4. Nozzle Requirements for Leaded Fuel. – Each dispensing device from which gasoline or gasoline-oxygenate blends that contain lead in amounts sufficient to be considered "leaded" gasoline, or lead substitute engine fuel, is sold shall be equipped with a nozzle spout having a terminal end with an outside diameter of not less than 23.63 mm (0.930 in).

3.2.5. Prohibition of Terms. – It is prohibited to use specific terms to describe a grade of gasoline or gasoline-oxygenate blend unless it meets the minimum antiknock index requirement shown in Table 1.

3.2.6. Method of Retail Sale. – Type of Oxygenate Must be Disclosed. – All automotive gasoline or automotive gasoline-oxygenate blends kept, offered, or exposed for sale, or sold at retail containing at least 1.5 mass percent oxygen shall be identified as "with" or "containing" (or similar wording) the predominant oxygenate in the engine fuel. For example, the label may read "contains ethanol" or "with methyl *tertiary*-butyl ether (MTBE)." The oxygenate contributing the largest mass percent oxygen to the blend shall be considered the predominant oxygenate. Where mixtures of only ethers are present, the retailer may post the predominant oxygenate followed by the phrase "or other ethers" or alternatively post the phrase "contains MTBE or other ethers." In addition, gasoline-methanol blend fuels containing more than 0.15 mass percent oxygen from methanol shall be identified as "with" or "containing" methanol. This information shall be posted on the upper 50 % of the dispenser front panel in a position clear and conspicuous from the driver's position in a type at least 12.7 mm (½ in) in height, 1.5 mm ($^1/_{16}$ in) stroke (width of type).

(Amended 1996)

3.2.7. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, on an invoice, bill of lading, shipping paper, or other documentation, a declaration of the predominant oxygenate or combination of oxygenates present in concentrations sufficient to yield an oxygen content of at least 1.5 mass percent in the fuel. Where mixtures of only ethers are present, the fuel supplier may identify either the predominant oxygenate in the fuel (i.e., the oxygenate contributing the largest mass percent oxygen) or, alternatively, use the phrase "contains MTBE or other ethers." In addition, any gasoline containing more than 0.15 mass percent oxygen from methanol shall be identified as "with" or "containing" methanol. This documentation is only for dispenser labeling purposes; it is the responsibility of any potential blender to determine the total oxygen content of the engine fuel before blending.

(Amended 1996)

Table 1. Minimum Antiknock Index Requirements

Term	Minimum Antiknock Index	
	ASTM D4814 Altitude Reduction Areas IV and V	All Other ASTM D4814 Areas
Premium, Super, Supreme, High Test	90	91
Midgrade, Plus	87	89
Regular Leaded	86	88
Regular, Unleaded (alone)	85	87
Economy	--	86

(Table 1. Amended 1997)

3.3. Diesel Fuel.

3.3.1. Labeling of Grade Required. – Diesel Fuel shall be identified by grades No. 1-D, ~~**No. 1-D (low sulfur),**~~ No. 2-D, ~~**No. 2-D (low sulfur),**~~ or No. 4-D.~~**– Each retail dispenser of diesel fuel shall be labeled according to the grade being dispensed except the words "low sulfur" are not required.**~~

~~**3.3.2. Location of Label. These labels shall be located on the upper 50 % of the dispenser front panel in a position clear and conspicuous from the driver's position, in a type at least 12 mm (½ in) in height,**~~

~~1.5 mm (1/16 in) stroke (width of type).~~

3.3.2. EPA Labeling Requirements Also Apply. – Retailers and wholesale purchaser-consumers of diesel fuel shall comply with EPA pump labeling requirements for sulfur under 40 CFR § 80.570.

3.3.3. Delivery Documentation for Premium Diesel. – Before or at the time of delivery of premium diesel fuel, the retailer or the wholesale purchaser consumer shall be provided on an invoice, bill of lading, shipping paper, or other documentation a declaration of all performance properties that qualifies the fuel as premium diesel fuel as required in Section 2.2.1.

(Added 1998) (Amended 1999)

(Amended 2008)

3.4. Aviation Turbine Fuels.

3.4.1. Labeling of Grade Required. – Aviation turbine fuels shall be identified by Jet A, Jet A-1, or Jet B.

3.4.2. NFPA Labeling Requirements also Apply. – Each dispenser or airport fuel truck dispensing aviation turbine fuels shall be labeled in accordance with the most recent edition of National Fire Protection Association (NFPA 407), "Standard for Aircraft Fuel Servicing."

Note: *For example, NFPA 407, **2007** ~~1990~~ Edition: Section **4.3.18** ~~2-3.18~~ Product Identification Signs. Each aircraft fuel servicing vehicle shall have a sign on each side and the rear to indicate the product. The sign shall have letters at least 75 mm (3 in) high of color sharply contrasting with its background for visibility. It shall show the word "FLAMMABLE" and the name of the product carried, such as "JET A," "JET B," "GASOLINE," or "AVGAS." (**NOTE:** Refer to the most recent edition of NFPA 407.)*

3.5. Aviation Gasoline.

3.5.1. Labeling of Grade Required. – Aviation gasoline shall be identified by Grade 80, **Grade 91**, Grade 100, Grade 100LL, or Grade 82 UL.

(Amended 2008)

3.5.2. NFPA Labeling Requirements also Apply. – Each dispenser or airport fuel truck dispensing aviation gasoline shall be labeled in accordance with the most recent edition of National Fire Protection Association (NFPA) 407, "Standard for Aircraft Fuel Servicing."

Note: For example, *NFPA 407, **2007** ~~1990~~ Edition: Section **4.3.18** ~~2-3.18~~ Product Identification Signs. Each aircraft fuel servicing vehicle shall have a sign on each side and the rear to indicate the product. The sign shall have letters at least 75 mm (3 in) high of color sharply contrasting with its background for visibility. It shall show the word "FLAMMABLE" and the name of the product carried, such as "JET A," "JET B," "GASOLINE," or "AVGAS." (**NOTE**: Refer to the most recent edition of NFPA 407.)*

3.6. Fuel Oils.

3.6.1. Labeling of Grade Required. – Fuel Oil shall be identified by the grades of No. 1 S500, No. 1 S5000, No. 2 **S500, No. 2 S5000,** No. 4 (Light), No. 4, No. 5 (Light), No. 5 (Heavy), or No. 6.

(Amended 2008)

3.7. Kerosene (Kerosine).

3.7.1. Labeling of Grade Required. – Kerosene shall be identified by the grades No. 1-K or No. 2-K.

3.7.2. Additional Labeling Requirements. – Each retail dispenser of kerosene shall be labeled as 1-K Kerosene or 2-K. In addition, No. 2-K dispensers shall display the following legend:

"Warning – Not Suitable For Use In Unvented Heaters Requiring No. 1-K."

The lettering of this legend shall not be less than 12**.7** mm (½ in) in height by 1.5 mm ($^1/_{16}$ in) stroke; block style letters and the color of lettering shall be in definite contrast to the background color to which it is applied.

3.8. E85 Fuel Ethanol.

3.8.1. How to Identify E85 Fuel Ethanol. – Fuel ethanol shall be identified as E85.

3.8.2. Labeling Requirements.

(a) Fuel ethanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

(b) A label shall be posted which states "For Use in Flexible Fuel Vehicles (FFV) Only" this information shall be clearly and conspicuously posted on the upper 50 % of the dispenser front panel in a type at least 12.7 mm (½ in) in height, 1.5 mm ($^1/_{16}$ in) stroke; (width of type). **A label shall be posted which states "Consult Vehicle Manufacturer Fuel Recommendation." and shall not be less than 6 mm ($^1/_4$ in) in height by 0.8 mm ($^1/_{32}$ in) stroke; block style letters and the color shall be in definite contrast to the background color to which it is applied.**

(Amended 2007 **and 2008)**

3.9. M85 Fuel Methanol.

~~**3.9.1. How Fuel Methanol is to be Identified. Fuel methanol shall be identified by the capital letter M followed by the numerical value volume percentage of methanol.**~~

3.9.1. How to Identify M85 Fuel Methanol. – Fuel Methanol shall be identified as M85.

Example: M85

3.9.2. Retail Dispenser Labeling. – ~~**Each retail dispenser of fuel methanol shall be labeled by the capital letter M followed by the numerical value volume percent and ending with the word "methanol."**~~

(a) Fuel methanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

Example: M85 Methanol

(b) A label shall be posted which states "For Use in Vehicles Capable of Using M85 Only." This information shall be clearly and conspicuously posted on the upper 50 % of the dispenser front panel in a type at least 12.7 mm (½ in) in height, 1.5 mm ($^1/_{16}$ in) stroke (width of type).

~~**3.9.3. Additional Labeling Requirements. Fuel methanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.**~~

(Amended 2008)

3.10. Liquefied Petroleum (LP) Gas.

3.10.1. How LPG is to be Identified. – Liquefied petroleum gases shall be identified by grades Commercial Propane, Commercial Butane, Commercial PB Mixtures or Special-Duty Propane (HD5).

3.10.2. Retail Dispenser Labeling. – Each retail dispenser of liquefied petroleum gases shall be labeled as "Commercial Propane," "Commercial Butane," "Commercial PB Mixtures," or "Special-Duty Propane (HD5)."

3.10.3. Additional Labeling Requirements. – Liquefied petroleum gas shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.10.4. NFPA Labeling Requirements also apply. (Refer to the most recent edition of NFPA 58.)

3.11. Compressed Natural Gas.

3.11.1. How Compressed Natural Gas is to be Identified. – For the purposes of this regulation, compressed natural gas shall be identified by the term "Compressed Natural Gas" or "CNG."

3.11.2. Retail Sales of Compressed Natural Gas Sold as a Vehicle Fuel.

3.11.2.1. Method of Retail Sale. – All compressed natural gas kept, offered, or exposed for sale or sold at retail as a vehicle fuel shall be in terms of the gasoline liter equivalent (GLE) or gasoline gallon equivalent (GGE).

3.11.2.2. Retail Dispenser Labeling.

3.11.2.2.1. Identification of Product. – Each retail dispenser of compressed natural gas shall be labeled as "Compressed Natural Gas."

3.11.2.2.2. Conversion Factor. – All retail compressed natural gas dispensers shall be labeled with the conversion factor in terms of kilograms or pounds. The label shall be permanently and conspicuously displayed on the face of the dispenser and shall have either the statement "1 Gasoline Liter Equivalent (GLE) is equal to 0.678 kg of Natural Gas" or "1 Gasoline Gallon Equivalent (GGE) is equal to 5.660 lb of Natural Gas" consistent with the method of sale used.

3.11.2.2.3. Pressure. – CNG is dispensed into vehicle fuel containers with working pressures of 16 574 kPa, 20 684 kPa, or 24 821 kPa. The dispenser shall be labeled 16 574 kPa, 20 684 kPa, or 24 821 kPa corresponding to the pressure of the CNG dispensed by each fueling hose.

3.11.2.2.4. NFPA Labeling. – NFPA Labeling requirements also apply. (Refer to NFPA 52.)

3.11.3. Nozzle Requirements for CNG. – CNG fueling nozzles shall comply with ANSI/AGA/CGA NGV 1.

3.12. Liquefied Natural Gas.

3.12.1. How Liquefied Natural Gas is to be Identified. – For the purposes of this regulation, liquefied natural gas shall be identified by the term "Liquefied Natural Gas" or "LNG."

3.12.2. Labeling of Retail Dispensers of Liquefied Natural Gas Sold as a Vehicle Fuel.

3.12.2.1. Identification of Product. – Each retail dispenser of liquefied natural gas shall be labeled as "Liquefied Natural Gas."

3.12.2.2. Automotive Fuel Rating. – LNG automotive fuel shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.12.2.3. NFPA Labeling. – NFPA Labeling requirements also apply (Refer to NFPA 57).

3.13. Oil.

3.13.1. Labeling of Vehicle Motor Oil.

3.13.1.1. Viscosity. – The label on each container of vehicle motor oil shall contain the viscosity grade classification preceded by the letters "SAE" in accordance with the SAE International's latest version of SAE J300.

3.13.1.2. Intended Use. – The label on each container of vehicle motor oil shall contain a statement of its intended use in accordance with the latest version of SAE J300.

3.13.1.3. Engine Service Category. – The label on each container of vehicle motor oil shall contain the engine service category, or categories, met in letters not less than 3.18 mm (1/8 in) in height, as defined by the latest version of SAE J183 or API Publication 1509, Engine Oil Licensing and Certification System.

3.13.1.2.1. Exception for Quantities of One Gallon (3.785 L) or Less. – A container of engine vehicle motor oil with a volume of one gallon **(3.785 L)** or less that does not meet an active service category, as defined by the latest version of SAE J183, shall bear a plainly visible cautionary statement in compliance with SAE J183, Appendix A, for obsolete API oil categories.

3.13.2. Labeling of Recreational Motor Oil.

3.13.2.1. Viscosity. – The label on each container of recreational motor oil shall contain the viscosity grade classification preceded by the letters "SAE" in accordance with the SAE International's latest version of SAE J300.

3.13.1.2. Intended Use. – The label on each container of recreational motor oil shall contain a statement of its intended use in accordance with the latest version of SAE J300.

3.13.3. Labeling of Gear Oil.

3.13.2.1. Viscosity. – The label on each container of gear oil shall contain the viscosity grade classification preceded by the letters "SAE" in accordance with the SAE International's latest version of SAE J306 or SAE J300.

3.13.2.1.1. Exception. – Some automotive equipment manufacturers may not specify an SAE viscosity grade requirement for some applications. Gear oils intended to be used only in such applications are not required to contain an SAE viscosity grade on their labels.

3.13.2.2. Service Category. – The label on each container of gear oil shall contain the service category, or categories, met in letters not less than 3.18 mm (1/8 in) in height, as defined by the latest version of SAE J308.

3.14. Automatic Transmission Fluid.

3.14.1. Labeling. – The label on a container of automatic transmission fluid shall not contain any information that is false or misleading. In addition, each container of automatic transmission fluid shall be labeled with the following:

(a) The brand name;
(b) The name and place of business of the manufacturer, packer, seller, or distributor;
(c) The words "Automatic Transmission Fluid;"
(d) The duty type of classification;
(e) An accurate statement of the quantity of the contents in terms of liquid measure.

3.14.2. Documentation of Claims Made Upon Product Label. – Any manufacturer or packer of any product subject to this article and sold in this state shall provide, upon request of duly authorized representatives of the Director, documentation of any claim made upon their product label.

3.15. Biodiesel and Biodiesel Blends.

3.15.1. Identification of Product. – Biodiesel ~~and Biodiesel Blends~~ shall be identified by ~~the capital letter B followed by the numerical value representing the volume percentage of biodiesel fuel (Examples: B10; B20, B100)~~ the term "Biodiesel" followed with the designation "B100." Biodiesel blends shall be identified by the term "Biodiesel Blend."

3.15.2. Labeling of Retail Dispensers.

3.15.2.1. Labeling of Grade Required. – Biodiesel shall be identified by the grades S15 or S500. Biodiesel Blends shall be identified by the grades No. 1-D, No. 2-D, or No. 4-D.

3.15.2.2. EPA Labeling Requirements Also Apply. – Retailers and wholesale purchaser-consumers of biodiesel blends shall comply with EPA pump labeling requirements for sulfur under 40 CFR§ 80.570.

3.15.2.3. Automotive Fuel Rating. – Biodiesel and biodiesel blends shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

3.15.2.4. Biodiesel Blends. – When biodiesel blends greater than 20 % by volume are offered by sale, each side of the dispenser where fuel can be delivered shall have a label conspicuously placed that states "Consult Vehicle Manufacturer Fuel Recommendations."

The lettering of this legend shall not be less that 6 mm ($^{1}/_{4}$ in) in height by 0.8 mm ($^{1}/_{32}$ in) stroke; block style letters and the color shall be in definite contrast to the background color to which it is applied.

~~**3.15.2. Labeling of Retail Dispensers Containing Between More than 5 % and Up to and including 20 % Biodiesel. Each retail dispenser of biodiesel blend containing more than 5 % and up to and including 20 % biodiesel shall be labeled with either:**~~

~~**3.15.2.1. The capital letter "B" followed by the numerical value representing the volume percentage of biodiesel fuel and ending with "biodiesel blend." (Examples: B10 biodiesel blend; B20 biodiesel blend), or;**~~

~~**3.15.2.2. The phrase "biodiesel blend between 5 % and 20 %" or similar words.**~~

~~**3.15.3. Labeling of Retail Dispensers Containing Biodiesel Blend More Than 20 % Biodiesel. Each retail dispenser of biodiesel blend containing more than 20 % biodiesel shall be labeled with the capital letter "B" followed by the numerical value representing the volume percentage of biodiesel fuel and ending with "biodiesel blend." (Example: B60 biodiesel blend).**~~

~~**3.15.4. Additional Labeling Requirements. The dispenser shall be labeled with "Consult Manufacturer fuel recommendations."**~~

3.15.~~5~~3. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, with a declaration of the volume percent biodiesel on an invoice, bill of lading, shipping paper, or other document. This documentation is for dispenser labeling purposes only; it is the responsibility of any potential blender to determine the amount of biodiesel in the diesel fuel prior to blending.

3.15.~~6~~4. Exemption. – Biodiesel blends that contain less than or equal to ~~containing~~ 5 % ~~or less~~ biodiesel by volume are exempted from the requirements of ~~Section 3.15~~ Sections 3.15.1., 3.15.2, and 3.15.3 ~~through 3.15.5.~~ when it is sold as "diesel fuel" as required in Section 3.3.

(Added 2005) **(Amended 2008)**

Section 4. Retail Storage Tanks and Dispenser Filters

4.1. Water in Gasoline-Alcohol Blends, Biodiesel, Biodiesel Blends, E85 Fuel Ethanol, Aviation Gasoline, and Aviation Turbine Fuel. – No water ~~or water-alcohol~~ phase greater than 6 mm (¼ in) as determined by an appropriate detection paste **or other acceptable means,** is allowed to accumulate in any tank utilized in the storage of gasoline-alcohol blend, **biodiesel, biodiesel blends, E85 fuel ethanol,** aviation gasoline, and aviation turbine fuel.

(Amended 2008)

4.2. Water in Gasoline, Diesel, Gasoline-Ether, and Other Fuels. – Water shall not exceed ~~50~~ 25 mm (~~2~~1 in) in depth when measured with water indicating paste **or other acceptable means** in any tank utilized in the storage of ~~biodiesel,~~ diesel, gasoline, gasoline-ether blends, and kerosene sold at retail except as required in Section 4.1.

(Amended 2008)

4.3. Dispenser Filters.

4.3.1. Engine Fuel Dispensers.

(a) All gasoline, gasoline-alcohol blends, gasoline-ether blends, E85 fuel ethanol and M85 methanol dispensers shall have 10 micron or smaller nominal pore-sized filter.

(b) All biodiesel, biodiesel blends, diesel and kerosene dispensers shall have a 30 micron or smaller nominal pore-sized filter.

4.3.2. Delivery of Aviation Fuel and Gasoline.

(a) Fuel delivery of aviation turbine fuel into aircraft shall be filtered through a fuel filter/separator conforming to API 1581 Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators.

(b) Fuel delivery of aviation gasoline into aircraft shall be filtered through a fuel filter/separator conforming to API 1581 Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators.

(Added 2008)

4.~~3~~4. Product Storage Identification.

4.~~3~~4.1. Fill Connection Labeling. – The fill connection for any **fuel** ~~petroleum~~ product storage tank or vessel supplying engine-fuel devices shall be permanently, plainly, and visibly marked as to the product contained.

(Amended 2008)

4.~~3~~4.2. Declaration of Meaning of Color Code. – When the fill connection device is marked by means of a color code, the color code shall be conspicuously displayed at the place of business.

4.~~4~~5. Volume of Product Information. – Each retail location shall maintain on file a calibration chart or other means of determining the volume of each regulated product in each storage tank and the total capacity of such storage tank(s). This information shall be supplied immediately to the Director.

Section 5. Condemned Product

5.1. Stop-Sale Order at Retail. – A stop-sale order may be issued to retail establishment dealers for fuels failing to meet specifications or when a condition exists that causes product degradation. A release from a stop-sale order will be awarded only after final disposition has been agreed upon by the Director. Confirmation of disposition shall be submitted in writing on form(s) provided by the Director and contain an explanation for the fuel's failure to meet specifications. Upon discovery of fuels failing to meet specifications, meter readings and physical inventory shall be taken and reported in confirmation for disposition. Specific variations or exemptions may be made for fuels designed for special equipment or services and for which it can be demonstrated that the distribution will be restricted to those uses.

5.2. Stop-Sale Order at Terminal or Bulk Plant Facility. – A stop-sale order may be issued when products maintained at terminals or bulk plant facilities fail to meet specifications or when a condition exists that may cause product degradation. The terminal or bulk storage plant shall immediately notify all customers that received those product(s) and make any arrangements necessary to replace or adjust to specifications those product(s). A release from a stop-sale order will be awarded only after final disposition has been agreed upon by the Director. Confirmation of disposition of products shall be made available in writing to the Director. Specific variations or exemptions may be made for fuels used for blending purposes or designed for special equipment or services and for which it can be demonstrated that the distribution will be restricted to those uses.

Section 6. Product Registration

6.1. Engine Fuels Designed for Special Use. – All engine fuels designed for special use that do not meet ASTM specifications or standards addressed in Section 2 shall be registered with the Director on forms prescribed by the Director 30 days prior to when the registrant wishes to engage in sales. The registration form shall include all of the following information:

6.1.1. Identity. – Business name and address(es).

6.1.2. Address. – Mailing address if different from business address.

6.1.3. Business Type. – Type of ownership of the distributor or retail dealer, such as an individual, partnership, association, trust, corporation, or any other legal entity or combination thereof.

6.1.4. Signature. – An authorized signature, title, and date for each registration.

6.1.5. Product Description. – Product brand name and product description.

6.1.6. Product Specification. – A product specification sheet shall be attached.

6.2. Renewal. – Registration is subject to annual renewal.

6.3. Re-registration. – Re-registration is required 30 days prior to any changes in Section 6.1.

6.4. Authority to Deny Registration. – The Director may decline to register any product that actually or by implication would deceive or tend to deceive a purchaser as to the identity or the quality of the engine fuel.

6.5. Transferability. – The registration is not transferable.

Section 7. Test Methods and Reproducibility Limits.

7.1. ASTM Standard Test Methods. – Standard Test Methods referenced for use within the applicable Standard Specification shall be used to determine the specification values for enforcement purposes.

7.1.1. Premium Diesel. – The following test methods shall be used to determine compliance with the premium diesel parameters:

(a) Cetane Number - ASTM D613;

(b) Low Temperature Operability - ASTM D4539 or ASTM D2500 (according to marketing claim);

(c) Thermal Stability - ASTM D6468 (180 min, 150 °C);

(d) Lubricity - ASTM D6079.

(Amended 2003)

7.2. Reproducibility Limits.

7.2.1. AKI Limits. – When determining the antiknock index (AKI) acceptance or rejection of a gasoline sample, the AKI reproducibility limits as outlined in ASTM D4814 Appendix XI shall be acknowledged for enforcement purposes.

7.2.2. Reproducibility. – The reproducibility limits of the standard test method used for each test performed shall be acknowledged for enforcement purposes, except as indicated in **Section 2.2.1, and** Section 7.2.1. **No allowance shall be made for the precision of the test methods for aviation gasoline or aviation turbine fuels.**

(Amended 2008)

7.2.3. SAE viscosity grades for Engine Oils – All values are critical specifications as defined in ASTM D3244. The product shall be considered to be in conformance if the Assigned Test Value (ATV) is within the specification.

(Added 2008)

7.2.3~~4~~4. Dispute Resolution. – In the event of a dispute over a reported test value, the guidelines presented in the most recent version of ASTM D3244, "Standard Practice for Utilization of Test Data to Determine Conformance with Specifications," shall be used to determine the acceptance or rejection of the sample.

7.2.5. Additional Enforcement Action. – The Director may initiate enforcement action in the event that, based upon a statistically significant number of samples, the average test result for products sampled from a particular person is greater than the legal maximum or less than the legal minimum limits (specification value), posted values, certified values, or registered values.

(Added 2008)

237-2 I Revise Section 2.1. Gasoline and Gasoline-Oxygenate Blends

Source: Chairman, Fuels and Lubricants Subcommittee/NIST Technical Advisor

Background: The proposed changes for the current Section 2.1. of the regulation are 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. Some of the members of the Subcommittee believe the 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.

1. *Ambiguity in the Current Regulation* – Discussions between regulators and industry, both during Fuel and Lubricants Subcommittee meetings and during the course of performing regulatory functions within the jurisdictions, have revealed that the current regulation has varying interpretations. The current regulation provides three options for blending.

   a. Option 1 (***2.1.1.1. The base gasoline used in such blends shall meet the requirements of ASTM D4814***) is generally interpreted to mean that if the base gasoline meets the ASTM requirements, then the blend is exempt from all ASTM volatility control parameters when splash blending occurs downstream with a finished gasoline. Others suggest that, based on the wording, when blending under these conditions, the blend is exempt from any ASTM standards. Still others suggest that the section fails to clearly exempt the

blend from any standards; therefore, they do not feel that this section provides the final blend with any relaxation from the ASTM standards.

b. Option 2 (***2.1.1.2. The blend shall meet the requirements of ASTM D4814***) is unclear to most readers that were not present when the rule was originally drafted. Obviously, a spark ignition engine fuel can certainly meet the ASTM standard and be compliant without question. In actuality, the rule was written to *require* that blends constructed at a refinery using ethanol as a blend stream component meet the ASTM standard.

c. Option 3 (***2.1.1.3. The base gasoline used in such blends shall meet all the requirements of ASTM D4814 except distillation, and the blend shall meet the distillation requirements of the ASTM specification***) is also unclear to many. This section was constructed by the original drafters of the rule to apply to blending with Blend Stock for Oxygenate Blending (BOBs). The original intent was based upon the fact that the blender knows the effect that the ethanol will have on the fuel, and the BOB should be manufactured with refinery stream components that will result in an ASTM-compliant fuel after the addition of the ethanol. Again, many readers do not understand this option and find that it is hard to distinguish from Option 2. The proposed revision combines Option 2 and Option 3 into a clear and concise statement.

2. *Lack of Acceptance by States* – The current model regulation has proven unacceptable to many states. According to a recent survey conducted, eleven states have adopted Section 2.1. into regulation, and approximately five other states have adopted similar versions of this section. Seven states have not adopted any engine fuel quality standards. The remaining twenty-seven states have not adopted this section of the model regulation. This section has been available for states to consider since 1995. Thirteen years later, there remains considerable resistance by states to adopt the current language.

3. *Sets an Enforceable Limit that Provides Minimum Consumer Protection and Builds a Bridge to the Future Predominance of Blend Stock Use* – The proposed revision provides state regulators with limits that will provide at least minimal protection to consumers when ethanol is blended with finished gasoline and removes the ambiguity that was left in the original wording. Major oil companies have asked states for a compromise standard that can be reasonably met when blending finished gasoline with ethanol. This standard is needed now in many markets because ethanol blends are not established, and it is not practical for many reasons to ship blend stock and finished gasoline into those markets. The proposed revisions provide that compromise, while maintaining the ability for regulators to react in the rare event that an abnormal base fuel is imported or entered into a marketplace and the gasoline blended with ethanol results in a blend that possesses unacceptable volatility characteristics that would result in vehicle operability issues. The proposed revision seeks to build a bridge to the time when ethanol blends may become the default fuel in a market place. At such time, it is likely that refiners will provide BOBs to those markets, and the resulting fuel would then be expected to meet ASTM standards. Finally, changes in the ASTM standards since the original regulation was passed also support a change in the model regulation. ASTM now allows a minimum T50 Distillation point of 150 ºF for gasoline in volatility Classes D and E. It is generally accepted that if ethanol were blended with a base gasoline with a T50 of 150 ºF, the final blend could be problematic.

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

2.1. 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 ethanol blends as provided below and be consistent with state and federal laws and regulations.

2.1.1. When finished gasoline is used as the base gasoline for blending, the base gasoline used in such blends shall meet the requirements of ASTM D4814 and the ethanol shall meet the requirements of ASTM D4806. The finished blend shall meet ASTM D4814 with the following permissible exceptions:

2.1.1.1. The distillation minimum temperature at the 50 volume percent evaporated point shall not be less than 66 ºC (150 ºF).

2.1.1.2. The Minimum Temperature for a Vapor/Liquid Ratio of 20 shall be as follows for the applicable vapor lock protection class:

Class 1 shall be 51.5 °C (125 °F)

Class 2 shall be 49.0 °C (120 °F)

Class 3 shall be 45.0 °C (113 °F)

Class 4 shall be 41.5 °C (107 °F)

Class 5 shall be 37.0 °C (99 °F)

Class 6 shall be 35.0 °C (95 °F)

2.1.1.3. The maximum vapor pressure shall not exceed the D4814 limits by more than 1.0 psi for:

(a) Only 10 % ethanol by volume blends (9 % minimum - 10 % maximum) from June 1 through September 15.

(b) All blends of up to 10 % ethanol by volume from September 16 through May 31.

2.1.2. When blend stock for ethanol blending is used, or when an ethanol blend is created with various refinery streams, the final blend shall meet the requirements of D4814 except that the vapor pressure requirements of 2.1.1.3. are permissible.

2.1.3. Blends of gasoline and ethanol shall contain no more than 10 volume percent ethanol.

Discussion: The Fuel and Lubricants Subcommittee 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 Handbook 130 and submit a draft revision of the regulation for consideration by the Committee at the 2008 Interim Meeting.

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. Again, after extensive deliberation 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 was not ready to move forward. Stakeholders would like this item to go back to the Fuels and Lubricants Subcommittee 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 (see Appendix B for written comments received on this item).

This item was sent to the full L&R Committee for consideration at the 2008 Interim Meeting on the recommendation of NIST's Technical Advisor and with the agreement of the Subcommittee 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, the Committee received one written comment (see Appendix B). This section will continue to remain Informational until additional information is received from the Fuels and Lubricants Subcommittee.

Ron Hayes, Chairperson FALS, can be contacted at (573) 751-2922 or at ron.hayes@mda.mo.gov.

250 INTERPRETATIONS AND GUIDELINES

250-1 V Amend Handbook 130 Interpretations and Guidelines Section 2.3.2. Guidelines for the Method of Sale of Fresh Fruits and Vegetables

(This item was adopted)

Source: Northeast Weights and Measures Association (NEWMA) (See Item 270-6 in the Report of the 92nd Annual NCWM Meeting in 2006)

Proposal: Amend Handbook 130 Interpretations and Guidelines Section 2.3.2. Fresh Fruits and Vegetables to recognize and support innovation in modern retail food marketing approaches at all forms of outlets, from typical grocery stores to the traditional farm markets.

Background: The method of sale guidelines for the sale of fresh fruits and vegetables that currently appear in Handbook 130 are outdated and in need of revision. The present guidelines do not recognize current retailing practices and are not expansive enough to cover many exotic and unusual fruits and vegetables that are becoming more common in the marketplace. Additionally, the present guidelines do not take into consideration the necessary limitations experienced by retailers at roadside stands and farmers' markets.

The original proposal for this item reflected input from only a single jurisdiction. The Committee was informed that several industry associations requested an opportunity to review and respond to this proposal. The Committee believed there were several factual errors within the classifications of produce provided, and several types of produce still were not covered by the provided proposal. The Committee made this item Developmental so it may be more fully developed with input from jurisdictions throughout the country and from affected industry associations and businesses.

Discussion: At its 2006 Interim Meeting, the CWMA heard a comment that this item should be moved to Informational for a year. The body of the guidelines should be circulated within the CWMA before becoming a Voting item. The WWMA L&R Committee received no comments regarding this item. The Committee chairman encouraged all to provide input on this item to the NCWM L&R Committee.

At the 2007 Interim and Annual Meetings, the Committee carried this item over as Informational to reconsider when comments are received from the regional associations, retailers, and other industries affected by the proposed amendments. The Committee realized the proposed replacement table had previously been omitted from this item. That oversight has been corrected in this report (see next page). At the 2007 Annual Meeting, concerns were raised that permitting quart sales of some fruits and vegetables would not be useful or practical and the Committee should reconsider that provision of the table.

The Committee requested this item be considered at all upcoming regional meetings and that comments be submitted prior to November 1, 2007, for inclusion and review at the Interim Meeting in January 2008.

At the 2008 Interim Meeting, the Committee had not received any comments from the regional meetings. The charts were reviewed at the Interim Meeting and minor modifications were made (i.e., added "grape tomato"). The Committee agreed that this item would be submitted for NCWM adoption at the 2008 Annual Meeting.

At the 2008 Annual Meeting, a state representative recommended adding "suitable dry measure" on the chart. The Committee discussed this and declined the recommendation, since this chart is a guideline.

Recommendation: Adopt the revised Section 2.3.2. Fresh Fruits and Vegetables for inclusion in NIST Handbook 130 – Section VI: NCWM Policy, Interpretations, and Guidelines as presented beginning on the next page.

2.3.2. Fresh Fruits and Vegetables

(Added 1979, Amended 1980, 1982, and **2008**)

This guideline applies to all sales of fruits and vegetables. There are two tables, one for specific commodities and one for general commodity groups. Search the specific list first to find those commodities that either don't fit into any of the general groups or have unique methods of sale. If the item is not listed, find the general group in the second table. The item may be sold by any method of sale marked with an X.

Method of Retail Sale for Fresh Fruits and Vegetables
Specific Commodity

Commodity	Weight	Count	Head or Bunch	Dry Measure (any size)	Dry Measure (1 dry qt or larger)
Artichokes	X	X			
Asparagus	X		X		
Avocados		X			
Bananas	X	X			
Beans (green, yellow, etc.)	X				X
Brussels Sprouts (loose)	X				
Brussels Sprouts (on stalk)			X		
Cherries	X			X	X
Coconuts	X	X			
Corn on the Cob		X			X
Dates	X				
Eggplant	X	X			
Figs	X				
Grapes	X				
Melons (cut in pieces)	X				
Mushrooms (small)	X			X	X
Mushrooms (portobello, large)	X	X			
Okra	X				
Peas	X				X
Peppers (bell and other varieties)	X	X			X
Pineapples	X	X			
Rhubarb	X		X		
Tomatoes (except cherry/grape)	X	X			X

Method of Retail Sale for Fresh Fruits and Vegetables General Commodity Groups					
Commodity	**Weight**	**Count**	**Head or Bunch**	**Dry Measure (any size)**	**Dry Measure (1 dry qt or larger)**
Berries and Cherry/Grape Tomatoes	**X**			**X**	
Citrus Fruits (oranges, grapefruits, lemons, etc.)	**X**	**X**			**X**
Edible Bulbs (onions [spring or green], garlic, leeks, etc.)	**X**	**X**	**X**		**X**
Edible Tubers (Irish potatoes, sweet potatoes, ginger, horseradish, etc.)	**X**				**X**
Flower Vegetables (broccoli, cauliflower, Brussels sprouts, etc.)	**X**		**X**		
Gourd Vegetables (cucumbers, squash, melons, etc.)	**X**	**X**			**X**
Leaf Vegetables (lettuce, cabbage, celery, etc.)	**X**		**X**		
Leaf Vegetables (parsley, herbs, loose greens)	**X**		**X**	**X**	
Pitted Fruits (peaches, plums, prunes, etc.)	**X**	**X**			**X**
Pome Fruits (apples, pears, mangoes, etc.)	**X**	**X**			**X**
Root Vegetables (turnips, carrots, radishes, etc.)	**X**		**X**		

Comparison of Current and Proposed Tables

The following comparison was prepared for the NCWM L&R Committee at the request of the Central Weights and Measures Association. It compares the current Guideline for the Method of Sale of Fresh Fruits and Vegetables in Section 2.3.2. of the Interpretations and Guidelines section of NIST Handbook 130 with the changes proposed in Item 270-6. A table which lists the commodities included in the current guideline but which do not appear in the Specific or General Tables is also provided.

Comparison Tables

Key to Tables:

Green rows (dark gray) indicate there is NO change between the current and proposed guideline (i.e., see the row for Artichokes in the Comparison Table).

Yellow rows (light gray) indicate there is a change between the current and proposed guideline (i.e., see "Dry Measure (1 dry qt or larger)" in the header row of the Comparison Table and the cell under the header for Count in the row for "Bananas").

Explanations of the differences or questions to be resolved are provided in the numbered footnotes which are located at the bottom of the table.

Specific Commodity	Weight	Count	Head or Bunch	Dry Measure (any size)	Dry Measure (1 dry qt or larger)[1]
Artichokes	X	X			
Asparagus	X		X		
Avocados		X			
Bananas[2]	X	X[2]			
Beans (green, yellow, etc.)	X				X
Brussels Sprouts (loose)[3]	X[3]				
Brussels Sprouts (on stalk)[4]			X[4]		
Cherries[5, 6]	X			X[6]	X[6]
Coconuts	X	X			
Corn on the Cob		X			X
Dates	X				
Eggplant	X	X			
Figs	X				
Grapes	X				
Melons (cut in pieces)	X				
Mushrooms (small)[6, 7]	X			X[6]	X[6]
Mushrooms (portobello, large)[7]	X	X[7]			
Okra	X				
Peas[8]	X				X[8]
Peppers (bell and other varieties)[9]	X	X			X[9]
Pineapples	X	X			
Rhubarb[10]	X		X[10]		
Tomatoes (except cherry/grape)[11]	X	X[11]			X

[1] This amendment changes the minimum dry measure from 1 peck to 1 dry quart. The equivalents are: one peck = 16 dry pints, 8 dry quarts, ¼ bushel, or 8.810 L.
[2] The current guideline forbids sales of bananas by count (only by weight). However, the NCWM permits individual bananas to be sold under the Ready-to-Eat Food exception in Section 1.12. in the Method of Sale of Commodities Regulation.
[3] The current guideline addresses Brussels sprouts and does not include the "loose" distinction.
[4] This is a new MOS for Brussels sprouts on "stalks" so there is nothing in the current method of sale to compare this with except that the current provision requires Brussels sprouts to be sold by weight.
[5] The reference to Section 4.46. Berry Baskets and Boxes Code in NIST Handbook 44 has been deleted.
[6] If a dry measure of "any size" is ok in column 3, is an X correct in the 4th column which limits sales to 1 dry quart or larger?
[7] This proposal distinguishes mushrooms by size between "small" and "large (portobello)" and introduces the method of sale by count for "large" mushrooms which is not permitted in the current guideline (only by weight or measure).
[8] The current guideline does not allow sales of peas by "dry measure" (only by weight).
[9] The current guideline does not allow sales peppers by "dry measure" (only by weight or count).
[10] The current guideline does not allow sales of rhubarb by "head or bunch" (only by weight).
[11] The current guideline does not allow sales of tomatoes by "count" (only by weight and dry measure).

General Commodity Group[26]	Weight	Count	Head or Bunch	Dry Measure (any size)	Dry Measure (1 dry qt or larger)
Berries[1] and Cherry/Grape Tomatoes	X			X	
Citrus Fruits (oranges[2], grapefruits[3], lemons[4], etc.)	X	X			X[2, 3, 4]
Edible Bulbs (onions[5, 6], garlic[7], leeks[8], etc.)	X	X[7]	X[7]		X[5, 6, 8]
Edible Tubers (Irish potatoes[9], sweet potatoes[10], ginger[11], horseradish[12], etc.)	X				X[9, 10]
Flower Vegetables (broccoli, cauliflower, Brussels sprouts[13], etc.)	X		X		
Gourd Vegetables (cucumbers[14], squash[15], melons[16], etc.)	X	X			X[15]
Leaf Vegetables (lettuce, cabbage[17], celery[18], etc.)	X		X[17, 18]		
Leaf Vegetables (parsley[19], herbs[20], loose greens[21])	X		X[21]	X[19, 21]	
Pitted Fruits (peaches, plums[22], prunes[23], etc.)	X	X[22]			X[22]
Pome Fruits (apples, pears, mangoes[24], etc.)	X	X			X[24]
Root Vegetables (turnips, carrots, radishes[25], etc.)	X		X[25]		

[1] The reference to Section 4.46. Berry Baskets and Boxes Code in NIST Handbook 44 has been deleted.
[2] The current guideline does not allow sales of oranges by "dry measure" (only by weight or count).
[3] The current guideline does not allow sales of grapefruit by "dry measure" (only by weight or count).
[4] The current guideline does not allow sales of lemons by "dry measure" (only by weight or count).
[5] The current guideline does not allow sales of onions by "dry measure" (see 6).
[6] The current guideline allows sales by weight or bunch for "spring or green" onions and sales by "weight" for dry onions.
[7] The current guideline does not permit sales of garlic by "dry measure" (only by weight or count).
[8] The current guideline does not allow sales of leeks by "count" or "dry measure" (only by weight).
[9] The current guideline does not allow sales of Irish potatoes by "dry measure" (only by weight).
[10] The current guideline does not allow sales of sweet potatoes by "dry measure" (only by weight).
[11] The current guideline does not include ginger.
[12] The current guideline does not include horseradish.
[13] Brussels sprouts are also in the Specific Commodity Table as "loose" and "on stalk."
[14] The current guideline does not allow sales of cucumbers by "dry measure" (only by weight or count).
[15] The current guideline does not include squash.
[16] The current guideline does not allow sale of whole melons by "dry measure" (only weight or count).
[17] The current guideline does not allow sales by cabbage by "count" (only by weight).
[18] The current guideline allows sales of celery by weight or count so perhaps the Committee should decide whether or not "head or bunch" or "count" is the most appropriate descriptor.
[19] The current guideline does not allow sales of parsley by "dry measure" (only weight or bunch).
[20] The current guideline does not include herbs.
[21] The current guideline does not allow sales of "Greens (all)" by count or dry measure (only by weight).
[22] The current guideline does not allow sales of plums by count (only by weight or dry measure).
[23] The current guideline does not allow sales of prunes by count or dry measure (only by weight).
[24] The current guideline does not allow sales of mangoes by dry measure (only by weight or count).
[25] The current guideline does not allow sales of radishes by "head or count" (only by weight).
[26] While many of these items may fall under the general categories listed above, it may improve uniformity and simplify the use of the table if all of the commodities were placed in a general category instead of the table, saying for instance, "Edible Tubers, etc."

This table lists the commodities that are in the current method of sale guidelines but which are not specifically identified in the proposed tables.*	
Commodity	**Method of Sale**
Apricots	**Weight**
Beets	**Weight or Bunch**
Cantaloupes	**Weight or Count**
Cranberries	**Weight or Measure**
Currants	**Weight or Measure**
Eggplant	**Weight or Count**
Escarole	**Weight or Bunch**
Kale	**Weight**
Kohlrabi	**Weight**
Limes	**Weight or Count**
Nectarines	**Weight or Count**
Papaya	**Weight or Count**
Parsnips	**Weight**
Persimmons	**Weight or Count**
Pomegranates	**Weight or Count**
Rutabagas	**Weight**
Spinach	**Weight or Bunch**
Tangerines	**Weight or Count**
*While many of these items may fall under the general categories listed above it may improve uniformity and simplify the use of the table if all of these commodities are placed in a general category instead of the table saying, for instance, “Edible Tubers, etc.”	

270 OTHER ITEMS – DEVELOPING ITEMS

INTRODUCTION

The NCWM has established a mechanism to disseminate information about emerging issues which have merit and are of national interest. Developing items either have not received sufficient review by all parties affected by the proposals or are 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 – Handbook 130 or Handbook 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 develop fully 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 92nd Annual NCWM Meeting in 2006)

Background: 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 µm (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 meeting the specification will pass the test. Applying an average test as specified in Section 2.2.1.(d) reduced that probability to 80 %.

The Committee received comments from several members of the Premium Diesel Work Group (WG) who did not support the item as presented by the petroleum industry member. WG members believed that the process that led to the current definition was very thorough and complete, and that the premium diesel lubricity requirements were established with a full understanding of their implications. The WG members felt that knowledgeable individuals provided input to the process, which led to the consensus position contained in the current regulation. The work being done by the WG was reported at meetings of ASTM Subcommittee E-2 every six months. The current regulation has been endorsed by the American Petroleum Institute, the Engine Manufacturers Association, and the NCWM.

Prior to the current requirement being adopted, the ASTM Lubricity Task Force conducted a great deal of research on this topic. Based on its research, the ASTM Lubricity Task Force concluded that a limit of 520 µm would meet the requirements of equipment in the field. Since the passage of this model regulation, ASTM included a lubricity requirement for No. 1 and No. 2 diesel fuel effective January 1, 2005. The ASTM requirement is also 520 µm.

WG members reported that when this regulation was written, fuels with adequate lubricity provided a functional benefit to the end user. The WG agreed with the ASTM Lubricity Task Force that 520 µm was the correct limit to set for premium diesel. However, the WG's review process also indicated increased pump wear for fuels with High-Frequency Reciprocating Rig (HFRR) values greater than 560 µm. The current reproducibility value of the HFRR

test method would have placed enforcement well beyond the 560 µm level, essentially allowing fuels with little lubricity protection to be sold as "Premium." The WG believed they could not recommend a premium fuel standard that would permit excessive pump wear. Using the statistical tools provided in ASTM D3244, the WG evaluated an enforcement limit of 560 µm. The statistical tools indicated that a single laboratory reporting the assigned test value would have an enforcement limit of approximately 80 % probability of acceptance, while the average of two separate laboratories reporting the assigned test value would have an enforcement limit of approximately 90 % probability of acceptance. It was agreed that for a premium fuel the average of two test results was the best approach given the current test methods and precision available. Therefore, if a test exceeded 560 µm, then a second test must be run. The average of the two tests must exceed 560 µm before a violation would occur. At the 2005 WWMA meeting, the Fuels and Lubricants Subcommittee agreed the proposal was the best approach at that time, and lacking new information, it continues to hold that position.

Discussion: 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. 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 the Subcommittee and requested its recommendation on how to proceed with the issue. The Subcommittee suggested this item remain on the agenda as an Information item until further notice and reported that the activities of ASTM International and the Coordinating Research Council were continuing.

At the 2008 Interim Meeting the Committee carried this item over as a Developing item. This proposal was sent to the Fuel and Lubricants Subcommittee (FALS) for its recommendation on how to proceed with the issue. The FAL Subcommittee suggested this item remain on the agenda as a Developmental item.

At the 2008 Annual Meeting no changes or recommendations were received from FALS. This item will remain Developmental and will await further development from FALS.

Proposal: Amend Section 2.2.1. Premium Diesel Fuel in Handbook 130 Uniform Engine Fuels, Petroleum Products, 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 a 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 µm as determined by ASTM D6079. If an enforcement jurisdiction's single test of more than 560 µm is determined, a second test shall be conducted. If the average of the two tests is more than 560 µm, the sample does not conform to the requirements of this part.

(Amended 2003)

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

270-2 D Amend Handbook 133 Section 2.3, Moisture Allowances to Provide Clearer Guidance

(See Item 270-7 in the Report of the 92nd Annual NCWM Meeting in 2006)

This item was added to the agenda of the Committee's Work Group (WG) on Moisture Loss (see Table B, Appendix C) following the 2008 NCWM Interim Meeting. Also, see Item 270-3 for an explanation of the WG's role and responsibilities and discussion on this item.

270-3 D Laws and Regulations Committee Work Group (WG) on Moisture Loss

(See Item 270-8 in the Report of the 92nd Annual NCWM Meeting in 2006)

Background: An issue about NIST Handbook 133 raised during the WG discussion was that the established moisture allowances listed in the handbook are not shown in one location in the text. The following table was prepared by NIST and may be considered for possible future inclusion in the handbook at the next WG meeting. The new Table 1.3 Moisture Allowances would bring all of the Moisture Allowance information together in one location in HB 133. A sample of a USDA Seal of Inspection was provided because NIST frequently receives inquiries from field officials asking what the USDA seal looks like.

Table 1.3 Moisture Allowances		
If you are verifying the net weight of packages of:	**The Moisture Allowance is:**	**Notes**
Flour	3 %	
Dry pet food	3 %	Dry pet food means all extruded dog and cat foods and baked treats packaged in Kraft paper bags and/or cardboard boxes with a moisture content of 13 % or less at time of pack.
Borax	See Section 2.4.	
Wet Tare Only		
If you are using Wet Tare in verifying the net weight of packages of one of the products listed below that bear a USDA seal of inspection:	**The Moisture Allowance is:**	 One example of a USDA Seal of Inspection. Seals may vary by product.
Fresh poultry	3 %	Fresh poultry is defined as poultry at a temperature of 3 °C (26 °F) that yields or gives when pushed with the thumb.
Franks or hotdogs	2.5 %	
Bacon, fresh sausage, and luncheon meats	0 %	If there is no free-flowing liquid or absorbent materials in contact with the product and the package is clean of clinging material.

Discussion: At the 2007 NCWM Interim Meeting, the Committee created a WG to undertake a review of a number of moisture loss and other issues relating to NIST Handbook 133 "Checking the Net Contents of Packaged Goods." NIST recommended the NCWM L&R Committee retain responsibility for this project instead of creating a task force that would entail additional travel and meeting expenses for all parties. The Board of Directors and the Committee agreed with that proposal because a large portion of this project can be accomplished using e-mail and teleconferences to reduce costs. The Committee also noted the number of items on the agenda has declined, making time available during the Committee's work sessions to address this project. If additional meetings are needed, they will be scheduled to coincide with the regional meetings to reduce travel and other costs. Another justification for this approach was that it allowed regional representatives on the Committee to develop a greater understanding of moisture loss and enabled them to better explain the subject matter to their constituents. Participation in this effort is open to all interested parties.

The first WG meeting took place at the 2007 Annual Meeting on Sunday, July 8, 2007, following the Committee's regular work session. The first major subject of discussion was the determination of tare using gel-soaker pads. The participants agreed that information on the appropriate test procedures for using gel soaker pads should be distributed to weights and measures officials and industry following the NCWM Annual Meeting. NIST agreed to publish an article in the upcoming edition of WMD's newsletter. A discussion of that issue is contained in Item 1 of Appendix C attached to this report. The group developed a formal work plan and addressed additional items listed in Appendix C as time allowed.

The Moisture Loss Work Group (WG) met at the 2008 Interim Meeting. There was limited time for discussion, so it was decided that no changes to NIST Handbook 133 would be recommended at this time. There were 25 representatives from state and local weights and measures programs, packagers, and other stakeholders in attendance. This was the first formal meeting of the WG. There was an extensive discussion of the goals, objectives, and effort, and a review of the history of the NCWM's efforts to address moisture loss issues. After a lengthy discussion, it was agreed that there is a need to develop informational materials to explain the average and individual package requirements and moisture allowances in NIST Handbook 133 so that handbook users can

understand how to effectively apply the statistical allowances and moisture loss adjustments when conducting package inspections. Also identified was the need to provide an explanation of federal net quantity of contents requirements. It was agreed that NIST WMD would draft a set of graphics to describe how the Sample Error Limit (SEL), Moisture Allowance, and other corrections are determined in NIST Handbook 133. NIST WMD will also prepare a compilation of laws and terms related to net quantity of contents verification for use by the WG in providing guidance to users of NIST Handbook 133 on allowing reasonable variations.

At the 2008 Annual Meeting the Moisture Loss WG met to review an animated PowerPoint presentation provided by Kenneth Butcher. This presentation explained the statistical requirement and moisture allowances of NIST Handbook 133. The WG provided input on the presentation. NIST will make revisions to the current presentation and, once finalized, it will be posted on the NCWM and NIST WMD websites for use in training and/or self study.

This WG will develop a draft guideline on small lot testing for use by inspectors and administrators. The WG will also develop guidelines for determining moisture loss allowances for products that are not listed in Handbook 133. The WG felt this additional information would be useful.

To participate in this WG, contact Lisa Warfield at (301) 975-3308, e-mail: lisa.warfield@nist.gov or Ken Butcher at (301) 975-4859, e-mail: kbutcher@nist.gov.

270-4 D Fuels and Lubricants Subcommittee (FALS) (Formerly the Petroleum Subcommittee)

At the 2008 NCWM Interim Meeting the Committee changed the name of the Petroleum Subcommittee to the Fuels and Lubricants Subcommittee (FALS).

Background: The Subcommittee had previously 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. Its first project was to carry out a major review and update of the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in Handbook 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 Labeling requirement in Item 232-2.

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

At the ASTM International meetings on December 5, 2007, in Phoenix, Arizona, the Subcommittee met to finalize its work on a number of projects that included a revision of the Uniform Engine Fuels Law and Regulation. A teleconference was held immediately prior to the 2008 Interim Meeting.

Discussion: At the 2008 Interim Meeting, the Subcommittee prepared and submitted a major revision of this regulation for consideration by the Committee. The Subcommittee also conducted a review of the Engine Fuels, Petroleum Products, and Automotive Lubricants Law and will prepare suggested changes for this Uniform Law as well (see Item 223-1). This item was reviewed at the 2008 Annual Meeting and remains Developmental.

If you would like to participate in this work 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.

270-5 D Pelletized Ice Cream

Background: At the 2008 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. She informed the conference that additional assistance would be required from the Food and Drug Administration (FDA) (see Appendix D: Letter from IICA to FDA, dated July 10, 2008). 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 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 about the pelletized ice cream product. The minutes (submitted below) provide great detail of the current issue, background information, representatives and manufacturers, method of sale, and test method procedure.

To: State Weights and Measures Directors, NCWM Laws and Regulations Committee and Other Interested Parties

On June 27, 2008 a meeting was held at NIST in Gaithersburg, Maryland to discuss issues related to the sale of packaged Pelletized Ice Cream (an attendance list is attached). The participants included State and local officials from Maryland, New York and Pennsylvania (including a representative of the NCWM L&R Committee), officials from the Food and Drug Administration, two producers of pelletized ice cream and a representative of the International Dairy Foods Association (International Ice Cream Association). The International Dairy Foods Association (IDFA), based in Washington, DC, represents the nation's dairy manufacturing and marketing industries and their suppliers. IDFA is composed of three constituent organizations: the Milk Industry Foundation (MIF), the National Cheese Institute (NCI) and the International Ice Cream Association (IICA). IDFA's 220 dairy processing members run more than 600 plants, and range from large multi-national organizations to single-plant companies. Together they represent more than 85 % of the milk, cultured products, cheese and frozen desserts produced and marketed in the United States. IICA's members that manufacture and sell pelletized ice cream product are: Dippin' Dots, Unilever/Good Humor Breyers, Kemps, and MolliCoolz. Carol Hockert, Chief of the NIST Weights and Measures Division, Lisa Warfield, David Sefcik, Elizabeth Gentry and Ken Butcher from NIST also attended.

Background Information

Pelletized ice cream is a unique and novel product that entered the market in 1988 with Dippin' Dots, which was predominantly sold in food service venues direct to consumers. Packaged pelletized ice cream entered the retail marketplace about 2 years ago. A suggested definition for Pelletized Ice Cream is: "beads of ice cream which are quick frozen with liquid nitrogen." The beads are relatively small, but can vary in shape and size. As with other types of ice cream, the pellets are produced in several flavors and they are frequently mixed with pieces of cookies, brownies or dough and other inclusions. Pelletized ice cream products meet the federal standard of identity (SOI) for ice cream as specified in 21 CFR § 135.110. The product is made using pasteurized mix consisting of one or more of the prescribed dairy ingredients, sweeteners, stabilizer and flavoring. The ice cream mix is stirred via pumping and spraying action as the droplets are frozen at very low temperatures using liquid nitrogen. The freezing process results in small round shaped beads or pellets of ice cream that meet the required 4.5 lbs per gallon weight requirements set forth in the SOI for ice cream. By itself, the density of pelletized ice cream is higher than other ice creams because the product contains much less air than regular ice cream. It was noted that using the 4.5 pound density in the FDA's standard of identity is not an effective tool for determining the accuracy of fluid measure because, due to the higher density of pelletized ice cream, a package could easily meet the weight requirement and still not contain the fluid measure declared on the label. Because density variations occur when inclusions are added to packages of pelletized ice cream and, because the inclusions (e.g., cookie bits) themselves vary in size and weight, using gravimetric testing to verify the declared volume of a sample may not be practical. At least two manufacturers label their packages by net weight and the others label their packages in terms of fluid measure. The manufacturers that label their packages by fluid measure include the air surrounding the pellets in their net quantity of contents statement. At least four of the five known producers of pelletized ice cream are currently selling their packaged product in retail stores and their producing facilities are located in California, Florida, Kentucky and Minnesota. At least one other manufacturer sells this product from bulk as a ready-to-eat food in mall kiosks, sports stadiums and other venues.

Pelletized ice cream products in the market are currently labeled by both weight and volume as follows:

Dippin' Dots - Weight (Dippin' Dots Pouches and product for export), and Volume (Orblets and bulk food service)

Kemps/Hood - Volume (Itty Bits)

Good Humor – Breyer's/Unilever - Weight (Popsicle Shots)

MolliCoolz - Weight (MolliCoolz)

Pelletized Ice Cream must be sold by Fluid Volume

The International Ice Cream Association (IICA) reported that there was a consensus among the manufacturers that pelletized ice cream should be labeled and sold on the basis of fluid volume in accordance with Subsection 1.7.1. Factory Packaged Ice Cream and Similar Frozen Products in the Method of Sale of Commodities Regulation in NIST Handbook 130. That Subsection reads "Ice cream, ice milk, frozen yogurt and similar products shall be kept, offered, or exposed for sale or sold in terms of fluid volume." FDA officials at the meeting agreed with industry's recommendation. When a food is frozen and it is sold and consumed in a frozen state, the declaration must express the volume at the frozen temperature. FDA regulations also permit fluid ounces to be used when "there is a firmly established general consumer usage and trade custom of declaring the contents of a …solid, semisolid, or viscous product by fluid measure." For ice cream there is a firmly established consumer usage and trade custom of selling ice cream and similar frozen products by volume. (See below for regulatory references.)

Volumetric Test Method and Air Measurement Issues

Once it was agreed that the appropriate method of sale for pelletized ice cream is by fluid volume, discussion moved to whether or not the air surrounding the beads is to be included as part of the fluid declaration. The IICA again reported that there was a consensus among the manufacturers that the air surrounding the beads should not be included as part of the fluid volume of the ice cream ("air-excluded.") To enforce the "air-excluded" standard, the water displacement method for ice cream novelties in Section 3.12. could be used if appropriate modifications were made to ensure the ice cream pellets can be completely and properly submerged. Some states and industry have tried alternative head-space methods and have substituted glycerin for water in the displacement procedures with some limited success. Pelletized ice cream can melt quickly but some states have reported that their tests indicate that with careful handling and strict temperature regulation of the water, the melting can be limited. Reducing melting is crucial to volume determinations because FDA requires that the volume of ice cream be determined while in a frozen state. After ice cream melts, it cannot be refrozen and tested because any air that the product contained is lost. There is also a need to develop a practical means to keep the pellets immersed in the test fluid so that their volume can be accurately determined. One approach which shows promise is to place the beads in a weighted nylon mesh bag (the volume displaced by the bag and weight are deducted). The IICA reported that in testing pelletized ice cream with added inclusions such as cookie pieces, cookie dough or brownies caused inaccurate results due to water absorption by the inclusions. But more testing and a collaborative study are needed before any one test method can be proven to provide reliable results. The group discussed the possibility of using screening tools or audit type tests to reduce destructive testing and to reduce the need to have inspectors collect samples and transport them to a testing laboratory

It was during this discussion a potential problem with the "air-excluded" net content declaration surfaced. For nutritional labeling purposes, manufacturers must also state the serving size in volume using household measures such as "tablespoon" or "cup" in the nutrition facts panel. Because the air will have to be subtracted from the total volume of the ice cream on the net content label, a consumer who were to measure out the total number of household ½-cup measures of ice cream (with air) would find a greater number of servings than what would be calculated by dividing the total net contents by 4 fl oz. The difference between the two volumes with or without air could be as much as 50 %. While this may not be a significant issue for individual serving size containers, it could be a problem when pelletized ice cream is sold in multiple serving containers. The potential problem is that consumers

might be confused or misled by the apparent discrepancies in the declarations. Several suggestions were offered to address the potential problem such as having the manufacturer provide special label information explaining the reason for the difference in volumes, but it became clear during the discussion that this issue would have to be formally submitted to the FDA nutritional labeling experts for resolution. The FDA representatives who attended the meeting were experts in package labeling and standards of identity but could not respond to questions on nutritional labeling. They asked that a written request be submitted to FDA requesting a prompt interpretation of its regulations. IDFA agreed that it would draft and send a request for interpretation to FDA before the NCWM Annual Meeting.

If FDA requires an "air-included" standard (i.e., the air surrounding the pellets is included in the fluid volume of the ice cream), the volume of the ice cream declared in the net quantity statement and the nutritional label serving size would be in approximate agreement. A test procedure to verify the volume of ice cream sold on this basis would be simpler to develop and verify than the water displacement method in Handbook 133. This test could be as simple as pouring the pelletized ice cream into a chilled cylinder and then taking a direct reading of the volume from the graduations on the cylinder. The suitability of the test equipment in either test would be crucial so that the combined uncertainties of the calibrated test equipment and the uncertainty of the test method do not exceed 1/6 of the Maximum Allowable Variation.

The IDFA representative will send a letter to FDA requesting an interpretation of its regulations in regard to whether the air is to be included in the volume of the ice cream and how industry will be expected to provide nutritional information on packages. Once FDA issues a response, IDFA will collaborate with state weights and measures officials and NIST to develop the appropriate test procedures. At this point, NIST will host a second meeting of weights and measures officials, industry and the FDA to move forward on the next steps needed. Once the industry receives notice from FDA on how they will have to package and label pelletized ice cream, the pelletized ice cream manufacturers will need a reasonable period of time to make the necessary changes to packaging for declaration of the net contents in fluid volume (from weight to volume or from volume of product with "air-included" to "air-excluded.") This will include package redesign, and the ability to use up existing inventory of packaging and product in storage and in the marketplace. Because the shelf life of ice cream can range from 12 to over 18 months, inventories of product may be extensive. IICA asked that during this time period of determining the proper net content declaration and measurement tool if weights and measures officials could consider using regulatory enforcement discretion for pelletized ice cream products.

This report was sent to all state Weights and Measures Officials and other interested parties. It will be presented to the Laws and Regulations Committee at the National Conference of Weights and Measures during its 93rd Annual Meeting in Burlington, Vermont – July 13 to 17, 2008.

References:
NIST Handbook 130 - 2008 Edition - Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality – Uniform Regulation for the Method of Sale of Commodities pages 104-105.

1.6. Fluid Milk Products. *– All fluid milk products, including but not limited to milk, lowfat.*

1.7. Other Milk Products. *– Cottage cheese, cottage cheese products, and other milk products that are solid, semi solid, viscous, or a mixture of solid and liquid, as defined in the Pasteurized Milk Ordinance of the U.S. Public Health Service, as amended in 1965, shall be sold in terms of weight.*

1.7.1. Factory Packaged Ice Cream and Similar Frozen Products. *– Ice cream, ice milk, frozen yogurt, and similar products shall be kept, offered, or exposed for sale or sold in terms of fluid volume.*

CFR TITLE 21 – FOOD AND DRUGS *Section 101.105 Declaration of net quantity of contents when exempt.*

(a) The principal display panel of a food in package form shall bear a declaration of the net quantity of contents. This shall be expressed in the terms of weight, measure, numerical count, or a combination of numerical count and weight or measure. The statement shall be in terms of fluid measure if the food is liquid, or in terms of weight if the food is solid, semisolid, or viscous, or a mixture of solid and liquid; except that such statement may be in terms of dry measure if the food is a fresh fruit, fresh vegetable, or other dry commodity that is customarily sold by dry measure. If there is a firmly established general consumer usage and trade custom of declaring the contents of a liquid by weight, or a solid, semisolid, or viscous product by fluid measure, it may be used. Whenever the Commissioner determines that an existing practice of declaring net quantity of contents by weight, measure, numerical count, or a combination in the case of a specific packaged food does not facilitate value comparisons by consumers and offers opportunity for consumer confusion, he will by regulation designate the appropriate term or terms to be used for such commodity.

To participate in the work on pelletized ice cream, please contact Lisa Warfield at NIST at lisa.warfield@nist.gov or at (301) 975-3308 or Cary P. Frye at the International Dairy Foods Association at cfrye@idfa.org or at (202) 220-3543.

Vicky Dempsey, Chairperson, Montgomery County, Ohio

Roger Macey, California
Stephen Benjamin, North Carolina
Joe Benavides, Texas
John Gaccione, Westchester County, New York

Ron Hayes, Missouri, Chairman of the Fuel and Lubricants Subcommittee

Pete O'Bryan, Foster Farms, Associate Member Representative
Doug Hutchinson, Canada, Technical Advisor
Ken Butcher, NIST, Technical Advisor
Lisa Warfield, NIST, Technical Advisor

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