

**U.S. National Work Group
for the
Development of Commercial Hydrogen Measurement Standards**

April 27, 2010

**Joint Device Standards Subcommittee (DSS) and Fuel Specifications Subcommittee (FSS)
Tele/Web Conference Meeting**

AGENDA

Time: April 27, 2010/3:00 p.m. – 4:30 p.m. ET-USA & Canada (GMT - 05:00)

Meeting Name: H2 U.S. National Work Group, April 27, 2010 Tele/Web Conference Meeting

NOTE: Please log into the web site first. On the attendee list click on the telephone icon and have the system call your telephone number. If that process does not work dial the number and enter the pass code listed below.

To join the meeting online: <http://nist.na6.acrobat.com/usnwg/>

Call-In Telephone Number: 1-877-685-5350

Call-In Password: 908127

Audio Conference Only: *6 to MUTE or UNMUTE

This meeting is sponsored by the U.S. Department of Energy and U.S. Department of Commerce's National Institute of Standards and Technology.

Purpose: The U.S. National Work Group (USNWG) is meeting to continue its work to promote the establishment of a comprehensive set of (1) design, accuracy, installation, use, and method of sale requirements, (2) test procedures, and (3) quality standards for hydrogen fuel and equipment used in hydrogen measurements for vehicle and other refueling applications.

ATTACHMENTS:

Appendix A Summary of the January 2010 USNWG Meeting

Appendix B Preliminary USNWG's Responses to Input on the Draft Hydrogen Codes from the Fall 2009 Regional Weights and Measures Associations and USNWG (rev.2)

Appendix C Draft 5.0 of the NIST Handbook 44 Hydrogen Gas-Measuring Devices Code

Appendix D Draft 3.1 of the NIST Handbook 130 Uniform Laws and Regulations and Hydrogen Fuel Quality Codes

Glossary of Acronyms			
ASTM	American Society of Testing and Materials International	MPa	megapascal
CaFCP	California Fuel Cell Partnership	NGV	Natural Gas Vehicle
CDFA DMS (also CADMS)	California Department of Food and Agriculture, Division of Measurement Standards	NHA	National Hydrogen Association
CSA	Canadian Standards Association, Incorporated	NIST	National Institute of Standards and Technology
DSS	Device Standards Subcommittee	NTP	Normal Temperature and Pressure
EPO 29	Draft Hydrogen Gas Retail Motor-Fuel Dispenser Examination Procedure Outline (EPO) 29	OEM	Original Equipment Manufacturer
FSS	Fuel Specifications Subcommittee	OIML	International Organization of Legal Metrology
HB 44	NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices (2009)	OIML R 139	Recommendation for Compressed gaseous fuel measuring systems for vehicles
HB 130	NIST Handbook 130 Uniform Laws and Regulations in the Area of Legal Metrology and Engine Fuel Quality (2009)	RMFD	Retail Motor-Fuel Dispenser
HGV	Hydrogen Gas Vehicle	SAE	Society of Automotive Engineers
ISO	International Organization for Standardization	SI	International System of Units
MMQ	Minimum Measured Quantity	USNWG	U.S. National Work Group
MOS	Method of Sale		
This table is meant to assist the reader in the identification of acronyms used in this summary and does not imply that these terms are used solely to identify these organizations or technical topics.			

AGENDA TOPICS

3:00 P.M. (ET)

(1) Welcome Current/New Members and Roll Call

New members of the USNWG and visitors will be welcomed, the meeting is called to order, time for roll call, and the meeting's purpose is reviewed. The collaborative work by the meeting's sponsors will be recognized. New participants will be invited to provide their name, affiliation, and state their specific area of interest in the work to develop hydrogen measurement standards.

(2) Administrative Business

The USNWG will discuss and decide on procedures for managing and documenting its technical work. The following item(s) will be addressed:

(a) Approve the Summary of the January 13, 2010 USNWG Meeting

A draft summary (see Appendix A) of the January 13, 2010 tele/web conference was emailed on April 16, 2010 to the group for its review. The summary includes information emailed to the USNWG on February 1, 2010 in the Abbreviated January 2010 Meeting Summary. The USNWG was asked to review, compile any comments, and be ready to vote on the approval of the summary by the upcoming April 27, 2010 tele/web conference meeting.

(b) Agenda Updates for April 2010

(3) Opportunity for Reports on Related Activities

The USNWG is working to harmonize, wherever possible, with related standards to encourage uniformity and to avoid contradictory requirements and trade barriers for U.S. industry. The USNWG Subcommittees will receive updates on work by organizations such as ASTM, CaFCP, DMS, NHA, OIML, SAE and other related activities as their work continues to progress.

(a) Draft Hydrogen Code Status in the U.S. Weights and Measures Standards Development Process

January 2010 NCWM Interim Meeting Positions on the Draft Hydrogen Codes

A status update on the NCWM's position on the draft hydrogen codes was emailed to the USNWG on February 1, 2010. Those updates will be included as part of this USNWG meeting agenda and subsequent meeting summary. The status of the draft hydrogen- equipment, method of sale, and fuel quality legal metrology requirements developed by the USNWG are:

- HB44 H2 Equipment Code-Voting as a Tentative Code
- HB130 H2 Method of Sale Requirements-Voting
- HB130 H2 Fuel Quality Code-Informational

The time, effort, and resources contributed by members of the USNWG were instrumental in reaching this point in the weights and measures standards development process.

The Committee on Specifications and Tolerances (S&T) for the National Conference on Weights and Measures (NCWM) met January 24-27, 2010. The S&T Committee heard testimony, discussed, and then decided that the proposal for a new NIST Handbook 44 Hydrogen Gas Measuring Devices - Tentative Code should move forward as a voting item. The proposal will be voted on at the July 11-15, 2010, 95th Annual Meeting of the NCWM at the Crowne Plaza, St. Paul Hotel, St. Paul, Minnesota. A tentative code is needed as a starting point for inspection and test procedures of these devices.

The Committee on Laws and Regulations (L&R) for the NCWM, heard testimony, discussed, and then decided to make the method of sale and fuel quality proposals two separate items. The method of sale requirements will be voted on at the July 2010 NCWM Annual Meeting to become a permanent part of NIST Handbook 130. The fuel quality proposal will appear in the L&R Committee's report as an Information Item because hydrogen fuel does not yet have a finalized ASTM or other national consensus standard. The L&R Committee will continue to consider recommendations from the USNWG on hydrogen's fuel quality and will carry over the proposal on its 2011 agenda.

The NCWM was advised the USNWG will continue to meet to address all comments on the draft hydrogen codes and to refine the requirements.

Upcoming Regional Weights and Measures Association Spring and Summer 2010 NCWM Meetings

The Central and Northeastern Weights and Measures Associations meet in May 2010 and National Conference on Weights and Measures meets July 11-15, 2010. Participants in those meetings will want and need to hear any further input, updates, etc. (written or in-person) on the draft hydrogen codes. Every effort should be made to notify affected groups, businesses, private or public associations, etc. about the proposed new hydrogen code.

The USNWG will continue to work through input it has received to refine the draft codes for the July 2010 NCWM Annual Meeting. A list of contacts for all three meetings is provided in the table below. The USNWG is encouraged to provide input to these groups by participating either in-person, by postal mail or email, by fax, or communicating through your associations.

U.S. Regional Weights and Measures Meetings Contacts	National Weights and Measures Meeting Contacts
<p><i>Northeastern Weights and Measures Association</i> May 10-13, 2010 Groton, Connecticut</p> <p>John Walsh - Chairperson Town of Framingham 150 Concord Street Framingham, MA 01702 email: jbw@framinghamma.gov phone: 508.532.5480 fax: 508.626.8991 www.newma.us</p>	<p><i>National Conference on Weights and Measures</i> July 11-15, 2010 St. Paul, Minnesota</p> <p>Committee on Specifications and Tolerances S&T Committee Chair Brett Saum BSaum@co.slo.ca.us</p>
<p><i>Central Weights and Measures Association</i> May 16-20, 2010 Springfield, Illinois</p> <p>Jonelle Brent Illinois Department of Agriculture 801 Sangamon Ave PO Box 19281 Springfield, IL 62794-9281 email: jonelle.brent@illinois.gov phone: 217.785.8301 www.cwma.net</p>	<p><i>National Conference on Weights and Measures</i> July 11-15, 2010 St. Paul, Minnesota</p> <p>Committee on Laws and Regulations L&R Committee Chair joe.benavides@texasagriculture.gov</p>

(4) Development of Device Standards and Test Procedures for Commercial Hydrogen Measurement

(a) Address Category Comments on the Draft Hydrogen Codes/Input to the July 2010 National Conference on Weights and Measures (NCWM)

History

In preparation for input to the July 11-15, 2010 NCWM, the USNWG will continue discussions to address comments received on the draft hydrogen codes from the U. S. regional weights and measures associations that met fall 2009 and USNWG members.

Since October 2009 there were 25 comments on the draft hydrogen codes from the weights and measures community and USNWG that require possible input from the USNWG. The reasons for these comments varied and are as follows:

- Clarify some text/terms borrowed from existing codes
- Address safety
- Provide an equipment test procedure
- Consider any limits imposed on other applications
- Select suitable corresponding terms/wording from alternative code sections
- Determine if some code sections apply to a laboratory environment
- Regroup paragraph(s) with similar technical requirement(s)

There are four groups of comments left for the USNWG to address. On January 13, 2010, the USNWG worked through Comments in Group [1] that required no modification to the draft hydrogen code. The USNWG should agree on how it will notify the submitter of those comments and the NCWM of its actions.

New Comments

One new comment on the H2 H44 Code surfaced after the January 13, 2010 meeting from two USNWG members:

- The comment would be designated as USNWG #2 and it is a request for more clarity on how PVT RMFD systems work to ensure there can be no diversion of product. This comment needs further research and would be placed into Comment Group [4]. The DSS Technical Advisor recommends the USNWG begin work on this comment as soon as possible to assist members of the USNWG developing laboratory and field test procedures for hydrogen dispensers and to ensure there are no initial gaps in the tentative code for the only two known systems in operation.
- The Technical Advisor recommends that dispenser OEMs and other interested parties work together in a small group to clarify how PVT RMFDs operate. The group is not delving into proprietary information, but will need to clarify where PVT values are derived (from which metrologically significant components). Does the USNWG have a consensus (for now) that requirements that might impact either the station owner or vehicle owner when refueling with PVT systems have not been overlooked? Could fraud be inadvertently or intentionally committed against either buyer or seller during the course of the transaction?

Strategy for Addressing the Remaining Comments

The DSS Technical Advisor is proposing the following strategy for working through the remaining comments (see Appendix B). The USNWG should consider:

Step 1:

Two tele/web conference meetings tentatively scheduled for:

- April 27th or there about to address Comments in Group [2] Low to Moderate Level of Modification to Draft Code Warranted (Language Needs Development)
- May 25th to address Comments in Group [4] A USNWG Response Requires Further Research and Work

Step 2:

For Comment in Group [LOD] that were left for USNWG discussion. It is suggested the USNWG examine whether or not these requirements, which exist in corresponding measuring devices codes, are necessary for hydrogen dispensers. To expedite the USNWG review process it is recommended that the three Comments in the [LOD] Group become a part of Comments in Group [4], which require further research, and

Step 3:

For Comments in Group [3] where Suggested Modifications to H44 were developed in December 2009, it is suggested that the USNWG address by email one comment every seven business days. Then the Technical Advisor polls the USNWG membership to determine if there is a consensus for the suggested changes to the draft code. This will allow the USNWG membership to consult within their agencies/organizations and associations on the proposed changes to the August 2009 Draft 5.0 of the H44 code. Should the review of multiple items become too complex for email communications the USNWG would explore the option of a third (or fourth) meeting.

(5) Next Steps/Tasks

The USNWG will discuss the next round of discussions to address comments on the draft hydrogen codes, other upcoming events, and the next steps in the weights and measures standards development process that might affect its work to fully develop hydrogen measurement standards and test procedures. Projects, strategies, and target dates will also be identified to ensure that the USNWG meets its goals.

(6) Next Meeting

The USNWG has no in-person meetings scheduled for 2010, but should discuss the necessity of a face-to-face session before July 2010.

4:30 P.M. (ET) Meeting Adjourns