

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

April 19, 2011

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

AGENDA

Time: Tuesday, April 19, 2011/3:00 p.m. – 4:30 p.m. EDT-USA & Canada (GMT - 05:00)

Meeting Name: H2 USNWG April 19, 2011 Web/Teleconference 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.adobeconnect.com/h2usnwgmtgapr19/>

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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 July 2010 USNWG Meeting (Under Development)

Appendix B Draft (revision 4) Examination Procedure Outline (EPO) 29 for Hydrogen Gas (H₂Gas) Retail Vehicle Fuel Dispensers

Appendix C Guidelines for Gravimetrically Testing Gaseous Hydrogen Dispensers (revision 7)

Glossary of Acronyms			
ASTM	American Society of Testing and Materials International	MPa	megapascal
CaFCP	California Fuel Cell Partnership	NCWM	National Conference on Weights and Measures
CDFA DMS (also CA DMS)	California Department of Food and Agriculture, Division of Measurement Standards	NGV	Natural Gas Vehicle
DSS	Device Standards Subcommittee	NIST	National Institute of Standards and Technology
EPO 29	Draft (revision 4) Examination Procedure Outline (EPO) 29 for Hydrogen Gas (H2Gas) Retail Vehicle Fuel Dispensers	NTP	Normal Temperature and Pressure
FCHEA	Fuel Cell and Hydrogen Energy Association	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 (2011)	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 (2011)	RMFD	Retail Motor-Fuel Dispenser
HGV	Hydrogen Gas Vehicle	S&T	Specifications and Tolerances
ISO	International Organization for Standardization	SAE	Society of Automotive Engineers
MMQ	Minimum Measured Quantity	SI	International System of Units
MOS	Method of Sale	USNWG	U.S. National Work Group
L&R	Laws and Regulations		
This table is meant to assist the reader in the identification of acronyms used in this agenda and does not imply that these terms are used solely to identify these organizations or technical topics.			

AGENDA TOPICS

3:00 P.M. (EDT)

(1) Welcome and Roll Call

New members of the USNWG and visitors will be welcomed, the meeting will be called to order, time allotted for roll call, and the meeting's purpose will be 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 July 2, 2010 USNWG Meeting

A draft summary (Appendix A-under development) of the July 2, 2010 tele/web conference meeting was not distributed to the work group for its review and approval. However, the USNWG received an abbreviated summary on July 9, 2010. Subsequent updates on the outcome of the July 2010 NCWM vote to approve the hydrogen device and method of sale codes were distributed to the USNWG and posted on the NIST WMD Hydrogen web site available at: <http://www.nist.gov/pml/wmd/lmdg/hydrogen.cfm>. A summary of the July 2nd meeting and the July 9, 2010 abbreviated summary will be developed and available on or before April 19, 2011. The USNWG will discuss the best strategy to allow sufficient time for a review of the July 2010 summary.

(b) Agenda Updates for April 2011

Items will be added to the agenda in order of urgency and discussed as time permits. Topics requiring lengthy discussion or research may be carried over to the next scheduled USNWG meeting.

(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, FCHEA, OIML, SAE and other related activities as their work continues to progress.

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

(a) Device Type Evaluation Criteria

On March 23, and April 7, 2011, the NCWM National Type Evaluation Technical Committee-Measuring Sector Subgroup met to review the draft Hydrogen Gas-Measuring Devices Checklist developed in January 2011 by the California's Division of Measurement Standards. The checklist includes general criteria for (1) the design of the measuring, indicating, and recording elements, (2) operation of the discharge components and systems that are card or cash activated, and (3) marking requirements. The Subgroup has tentative plans for meeting the third or fourth week of April. The next step will be for the Subgroup to distribute an updated draft checklist to the USNWG for its review and comments. The USNWG should consider a tele/web conference meeting in early August 2011 to try to reach a consensus on the final draft of the NCWM NTEP hydrogen dispenser type evaluation checklist. The Subgroup plans to submit a final draft of the checklist to the Measuring Sector for its approval in late September/early October 2011.

NOTE: The NIST Handbook 44 Section 1.10 General Code and Section 3.39 Hydrogen Gas Measuring Devices-Tentative Code are the basis for: (1) Type Evaluation Criteria used to conduct evaluations on a device before that device can receive approval for commercial use and (2) Field Inspection and Test Procedures used by regulatory officials in their day-to-day evaluation of devices in commercial use to determine if a device meets design, operation, and performance requirements. NIST Handbook 44 is available on the NIST WMD web site at: <http://www.nist.gov/pml/wmd/pubs/h44-11.cfm>.

(b) Test Procedures

A key objective for the April 2011 USNWG meeting will be to ensure we have identified all viable test procedures and provide input on test methods not previously identified that can be used to determine the performance of a retail hydrogen gas fuel dispenser. The ultimate goal will be to develop outlines of examination procedures for all three tests (gravimetric, volumetric, and master meter) recognized in NIST Handbook 44 Section 3.39 paragraph N.4.Tests. Attached to the meeting agenda are the current Draft (revision 4) Examination Procedure Outline (EPO) 29 for Hydrogen Gas (H₂Gas) Retail Vehicle Fuel Dispensers (see Appendix B) and the corresponding Guidelines for Gravimetrically Testing Gaseous Hydrogen Dispensers (revision 7) (see Appendix C) for the USNWG's review. Marc Buttler, NIST Technical Advisor to the Fuel Specifications Subcommittee, will lead efforts on the development of EPOs for the volumetric and master meter test methods and seek input from regulatory agencies, the private sector, laboratories, and academia on the various test methods.

(5) Next Meeting

The USNWG member are asked to review their calendars in preparation for a possible tele/web conference meeting in early August 2011 to discuss the final draft of the NCWM NTEP hydrogen dispenser type evaluation checklist.

In addition to the development of test procedures, the USNWG should consider prioritizing work on any remaining projects such as (1) the hydrogen fuel quality standard, (2) addressing wholesale applications, other methodologies in use for gas measurement, and liquid hydrogen dispensers, and (3) defining terminology e.g., "discontinuous adjusting means."

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