

NATIONAL HYDROGEN AND FUEL CELLS CODES AND STANDARDS COORDINATING COMMITTEE

Wednesday, February 2nd, 2011
TIME: 3:00 – 4:30 pm (Eastern Daylight Time)
CALL-IN NUMBER: (641) 594-7000 Passcode: 824011#
WEBINAR: <https://www1.gotomeeting.com/register/502516201>

- 1 Roll Call
See Item 7

- 2 Review of Anti-Trust Guidelines
http://www.usfcc.com/members/antitrust_guidelines_rev.pdf

- 3 Review of/Corrections to January Draft Minutes (attached and can be found at www.hydrogenandfuelcellsafety.info/)
No thru-wall failures have occurred.

- 4 DOE/HQ Update Antonio Ruiz
Antonio Ruiz provided an update.
February 14th, 2012 budget rollout expected
2011 budget is on CR until March 12th
Fuel Cell and Hydrogen Energy Conference is coming up in February
Hydrogen Storage Workshop on 13th and 14th, cryo compressed etc.
Infrastructure Workshop on 16th and 17th in D.C.
17th and 18th HTAC
 Waste to energy and McKenzie report overview
Japan hydrogen and fuel cell demonstration workshop in Japan coming up starting Feb 28th.
IPHE indoor workshop in Japan.
Fuel Cell Expo in Japan March 2,3,4.
 Tank testing protocols
ICHS IV Sept. 12-14 in San Francisco
HIPOC is meeting on 17th and 18th after the fuel cell conference.
WG #6 is also meeting during the meetings in Japan.

- 5 Calendar of C&S Events and Fuel Cell Safety Information Kelvin Hecht
http://www.fuelcellstandards.com/calendar_new.html Karen Hall
<http://www.hydrogenandfuelcellsafety.info/> Robert Wichert
FCHEA Priority Matrix Robert Wichert
<http://www.fchea.org/members/Regulatory-Matrix.January-27-2011-Draft-0.pdf>
Name Change Proposal Robert Wichert

- 5 Discussion Topics Discussion Leader

Hydrogen Fuel Quality Jim Ohi
ASTM Jackie Button
Inter-Laboratory Testing to validate ASTM Standard Test Methods
10 laboratories and counting. More information after this Friday.
Possible international participation to follow.

AGENDA

Continued

ASTM D03.14 Hydrogen and Fuel Cells Update

Work Item	Title	Constituents (DL)	Update
4548	Standard Test Method for Determination of Trace Contaminants in Hydrogen and Related Fuel Cell Feed Gases	CO ₂ (0.5 ppm), nitrogen (5 ppm), argon (1 ppm), oxygen (2 ppm), and water (1 ppm)	In publishing: D7649-10
5847	Standard Practice for Sampling of High Pressure Hydrogen and Related Fuel Cell Feed Gases	Gaseous sampling	Negatives withdrawn: In publishing
6527	Standard Test Method for Ion Selective Electrode Based Determination of Ammonia in Hydrogen and Other Fuel Cell Feed Gases	Ammonia (unknown)	N/A
6624	Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Hydrogen and Other Fuel Cell Feed Gases	Formaldehyde (unknown)	N/A
9211	Standard Test Method Ion Chromatography Based Determination of Cations in Hydrogen and Other Fuel Cell Feed Gases	Formic Acid (low ppb to ppm)	Published official item: D7550-09
9688	Standard Test Method for Sampling of Particulate Matter in High Pressure Hydrogen used as a Gaseous Fuel with an In-Stream Filter	Particulate sampling	Published official item: D7650-10
10196 (27163)	Standard Test Method for Determination of Ammonia and Trace Water in Hydrogen and Other Gaseous Fuels by Infrared Spectroscopy	Ammonia, CO ₂ , CO, formaldehyde, formic acid, and water (defined by EPA 40 CFR part 136 Appendix A "meet detection limits of SAE TIR J2719")	In publishing: D7653-10
21162	Standard Test Method for the Characterization of Particles from Hydrogen Fuel Streams by Scanning Electron Microscope	Particulates	N/A
21597	Standard test method for microscopic measurement of particulates in hydrogen fuel	Particulates	In publishing: D7634-10
21611	Standard test method for gravimetric measurement of particulates in hydrogen fuel	Particulates	Published official item: D7651-10
22378	Determination of Total Hydrocarbons (C1 basis) in Hydrogen by Total Hydrocarbon Analyzer (THC)	Total hydrocarbons (0.1 ppm)	Negative withdrawn: in publishing
23815	Determination of Total Halocarbons contained in Hydrogen and other gaseous fuels	Total halogenated compounds ("halocarbon determination requirements contained in SAE J2719" 0.1 ppb)	Being revised for main ballot (March '11)

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NIST

Juana Williams

**National Institute of Standards and Technology (NIST)
Weights and Measures Division (WMD)**

**Report on the Development of Commercial Hydrogen Measurement Standards
to the
February 2, 2011 – NHFCCSCC
by Juana Williams**

(1) U.S. Weights and Measures Standards Development Process

Fuel Quality Regulation

The National Conference on Weights and Measures (NCWM) Laws and Regulations (L&R) Committee has assigned a status to the hydrogen gas fuel quality proposals on its January 2011 Interim Meeting Agenda. The L&R Committee amended Agenda Item 237-1, a proposal for a hydrogen gas fuel quality specification, to include updates on the latest work by ASTM. Agenda Item 237-1 becomes an information item. Agenda Item 237-2, three proposed new definitions related to the fuel specification, will move forward as a voting item at the July 2011 NCWM Annual Meeting.

Type Evaluation Criteria

On January 11, 2011, the California Division of Measurement Standards distributed a draft Hydrogen Gas-Measuring Devices Checklist to the NCWM National Type Evaluation Technical Committee Measuring Sector Subcommittee for their review and comments. 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. A deadline has not been established for the subcommittee's comment period.

John Mough was on the call. California staff is working with Juana on these topics.

SAE J2719

Mike Steele

Mike Steele provided an update. Next meeting is March 16th. Publishing is waiting on the ASTM standard testing methods. Publication may proceed without them, but this will need to be decided by the group.

ISO TC 197 WG 12

Jim Ohi

Jim Ohi was on the call. No changes since the last call.

ISO TC 197 WG 14

Karen Hall

Karen Hall was on the call. WG 14 is awaiting comments on the Committee Draft. The US TAG is working on a US position. Comments close in March. WG 14 might meet in the springtime.

Fuel Cell Forklifts

Aaron Harris

Aaron Harris provided an update. The fork lift task force met late last month. Sandia Update 22,000 cycles on as-manuf. Tanks. 10,000 cycles on engineered defect tanks. Cycling continues. No THROUGH-WALL failures. **NUMEROUS O-RING FAILURES HAVE OCCURED WHICH**

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WERE INITIALLY THOUGHT TO BE THROUGH-WALL FAILURES. INVESTIGATION OF THE O-RING FAILURES CONTINUES.

UL 2267 has been updated. Additional changes are being discussed along with SAE 2919 (call scheduled for next week.

HPIT-1 is working on the text, completing everything except tanks. Tanks follows completion of the Sandia testing.

NFPA 52 is working through the proposal period.

HIPOC will be addressing indoor refueling at the meeting this month.

NFPA 52 Committee voted to remove all hydrogen requirements in favor of NFPA 2. The standards council is expected to ratify this decision. The NFPA 52 proposals will be passed to NFPA 2.

HPIT - 2 is going to start soon.

Tank Testing

SNL

Sandia Update

22,000 cycles on as-manuf. Tanks. 10,000 cycles on engineered defect tanks. Cycling continues. No failures.

CSA

Josip Novkovic

Josip was on the call. No further update on fork lifts.

CSA FC.1 members are working on updating the document. A new text is expected shortly.

CSA FC.3 will be discussing bringing in IEC 62282-5-1 as a US Standard.

CSA is looking at bringing in IEC 62282-6-100 as a US standard in partnership with UL.

Question: Is anybody using FC.3? Some industry members have expressed interest.

Question: Status of HGV-4-10?

NFPA 52/55

Paul May

See update above. Carl Rivkin provided an update. Separation distance information will be presented to the NFPA 55 meeting on February 9th in Phoenix.

6 Codes and Standards Organizations

All

This is the opportunity for CDOs, SDOs, Panels, Committees, etc. to provide updates and issues to the group.

Late entry – ISO TC 197 / TC 22 WG #5 ISO 17268 meeting March 17 / 18 in California.

ISO TC 197 WG #15 Meeting March 16 / 17 in Montreal.

ICC – Bruce Johnson provided an update

ICC is re-structuring their Code Councils to accommodate scheduling issues (3 year cycle) and to increase opportunities for participation. 2015 code change cycle (starts later this year) will open up this year. Calls for volunteers will go out all at once. The call will go out later this week. All technical committees will be filled for the next cycle. Everyone needs to reapply. No term limits will be enforced. Technical Code Development Committee members are charged with reviewing code changes within their area of responsibility. Energy/Fire/Structural/etc. Each Committee meets once during the Code Hearings. The Councils are involved with governance and oversight. They make recommendations on who fills the Technical Code Development Committees.

2012 Codes will be released for review shortly. NY will be consulted on the Fire Code issues related to hydrogen. A bill will go to the NY City Council this summer.

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ICC – <http://www.iccsafe.org/cs/cc/Pages/default.aspx?r=cc>

IEC TC 105 update by Kelvin Hecht

**February 2011 Meeting
of the
DOE Hydrogen
Codes & Standards Coordinating Committees
(DOE/FCHEA)**

Kelvin Hecht

TC105 – Fuel Cell Technologies

- **WG#3 (IEC 62282-3-1 Ed.2, *Stationary Fuel Cells-Safety*)**
- **Vote on CDV by April 15, 2011.**
- **US manufacturers are asked to comment.**
- **WG#3(NWIP -*Stationary Fuel Cells-Small systems serving as a heating appliance*)**
- **Fuel heat input based on net caloric value < 70 kW**
- **Vote by April 29, 2011.**
- **WG#4 (IEC 62282-3-2 Ed.2, *Stationary Fuel Cells-Performance*)**
- **CDV approved with comments on January 28, 2011**
- **FDIS to be posted by June 2011.**
- **WG#6 (IEC 62282-4-100 Ed.1, *Forklifts*)**
- **Vote on NWIP by March 4, 2011 – USTAG by February 4th**
- **USTAG plans to support with Harris, Wichert, Steels, Chirdon & Florence (?) as experts.**
- **WG#7 (IEC 62282-5-1 Ed.2, *Portable Fuel Cells –Safety*)**
- **Vote on CDV by February 4, 2011**
- **WG#8 (IEC/DPAS 62282-6-150, *Micro Fuel Cells – Safety – Water reactive compounds in indirect PEM fuel cells*)**
- **Approved January 21, 2011.**
- **WG#10 (IEC 62282-6-300, *Micro fuel cells-Cartridge interchangeability*)**
- **Proposed 2nd edition posted January 28, 2011.**
- **Vote and comment on CDV by March 4, 2011. (skipping CD stage)**
- **Questionnaire: To include “Flow Battery Systems” into TC105.**
- **United Technologies**
- **ARPA**
- **DuPont**

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US Tag

Jill Thompson

February 2011 Update ANSI-Accredited U.S. TAG for ISO/TC 197, *Hydrogen technologies*

1. Comments requested

- **N486**, ISO/CD 14687-3, *Hydrogen Fuel — Product Specification — Part 3: Proton exchange membrane (PEM) fuel cell applications for stationary appliances*

The U.S. TAG was requested to comment on the draft of ISO/CD 14687-3. Comments were due by January 31.

A TAG webconference will be held on February 10 from 11:00 AM to 1:00 PM EST to review all comments and prepare a consensus list for submission.

3. Ballot pending

- ISO/DIS 14687-2, *Hydrogen fuel — Product specification — Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles*

The U.S. TAG is requested to vote by April 11.

A TAG webconference will be held at the end of April or in early May to review the comments and prepare a consensus list for submission with the U.S. position.

4. Future meetings

- WG 6, *Gaseous hydrogen and hydrogen blends — Land vehicle fuel tanks* (joint with ISO/TC 58/SC 3, *Cylinder design*, and ISO/TC 22/SC 25, *Vehicles using gaseous fuels*)

March 2-3 in Tokyo, Japan

- WG 15, *Gaseous hydrogen — Cylinders and tubes for stationary storage*

Tentatively scheduled for March 16-18 (two days) – location TBD

7 Open Discussion & Other Issues

Next meeting March 2nd

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Attendees

androsky, anthony glorytrip@verizon.net
Blake, Chad chad.blake@nrel.gov
boyd, bob boyd.rw@gmail.com
Buttler, Marc marc.buttler@nist.gov
Button, Jackie jbutton@cafcp.org
collins, william william.collins@utcpower.com
Hall, Karen khall@ttcorp.com
Harris, Aaron aharris@nuvera.com
Harris, Aaron aharrins@nuvera.com
hecht, kelvin kelvinhecht@comcast.net
Hewett, Russell rhewett2@ec.rr.com
Horne, Doug dbhorne1@comcast.net
JEZIERSKI, KELLY kellyj@nextenergy.org
Johnson, Bruce bejohnson@iccsafe.org
manchester, christine chris@reglogic.org
May, Paul pmay@nfpa.org
Mitchell, Sally smitchell@norriscylinder.com
moncrief, john jmoncrief@norriscylinder.com
Mough, John jmough@cdfa.ca.gov
Nakarado, Gary gary@reglogic.org
Novkovic, Josip josip.novkovic@csa-america.org
Ohi, Jim jimohi@q.com
Prevish, Thomas tprevish@clearedgepower.com
Rivkin, Carl carl.rivkin@nrel.gov
Ruiz, Antonio antonio.ruiz@ee.doe.gov
Shumaker, Dan dan.shumaker@ee.doe.gov
Steele, Mike msteele308@gmail.com
Thompson, Jill jthompson@cganet.com
Tucky, Steve steve.tucky@csa-america.org
Weil, Scott kenneth.weil@ee.doe.gov
Weiner, Steven sc.weiner@pnl.gov
Williams, Juana juana.williams@nist.gov
Zajac, Andrea zajacanma@msn.com
Chris Manchester, chris@reglogic.com
Gary Nakarado, gary@reglogic.com