

MINUTES OF THE AUGUST 2008 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE

MEETING DATE: August 6, 2008

MEETING TIME: 3:00 – 4:30 PM (EDT)

FACILITATORS: Sondra Ullman

1.0 MEETING PARTICIPANTS

Karen and Robert welcomed the group. Robert Wichert called the roll.

Present on the call:

Jackie Birdsall	Terry Conrad	Kyle Gibeault
Karen Hall	Kelvin Hecht	Bill Hoagland
Ken Krastins	Paul May	Darren Meyers
Christopher Moen	Carl Rivkin	Glenn Schleffler
Roger Smith	Sondra Ullman	Mike Veenstra
Juana Williams	Andrea Zajac	Mike Steele

NEW MEMBER: Chad Blake, NREL

2.0 REVIEW OF USFCC ANTITRUST GUIDELINES

USFCC members were asked by Robert Wichert to be mindful of the anti-trust guidelines, which can be found on the USFCC members' website, as well as an attachment to the minutes of past meetings.

[Antitrust Guidelines](#) (27Kb PDF)

3.0 REVIEW OF/CORRECTIONS TO DRAFT MINUTES FROM PRIOR TELECONFERENCE MEETINGS

Tabled until next month.

4.0 OPPORTUNITY FOR DOE/HQ REPRESENTATIVE TO PROVIDE LATEST INFORMATION ON WHAT'S GOING ON AT DOE

Antonio Ruiz was not on the call. No update was given.

5.0 REPORT ON CALIFORNIA HYDROGEN FUELS PROJECT'S EFFORTS TO DEVELOP A CALIFORNIA-SPECIFIC HYDROGEN FUEL QUALITY STANDARD

John Mough was not on the call. No update was given.

6.0 REPORT ON THE CALIFORNIA FUELS PROJECT'S EFFORTS TO DEVELOP A CALIFORNIA-SPECIFIC HYDROGEN FUEL DISPENSER STANDARD

Gary Castro and Norm Ingram were not on the call. No update was given.

7.0 REPORT ON THE 3RD EUROPEAN SUMMER SCHOOL ON HYDROGEN SAFETY

Karen Hall provided an update on the school. Experts from industry and academia were brought in from all over the world for ten days of intensive training. It was a unique opportunity to learn from the experts in the

subject. Sandia was represented and talked about the risk-informed approach. Hydrogen embrittlement and metallurgy was discussed by Sandia. This is a good opportunity to bring people up to speed quickly. It will be offered again next year. The cost to self-funded attendees is 800 Euros plus living expenses, which ended up being around 1,200 Euros plus airfare. A full report will be provided in the Hydrogen Safety Report.

8.0 REPORT ON HYDROGEN INDUSTRY PANEL ON CODES (HIPOC) ACTIVITIES

Darren Myers provided a report on HIPOC. Harmonization is the topic du jour at HIPOC. Cross pollination between committees is helping in this regard. A first draft for public comment of NFPA 2 will be issued later this year. Two goals of the HIPOC meeting at the Fuel Cell Seminar are to solidify Fire Code changes as well as harmonization with Canada. ICC Final Action Hearings are coming up September 14th through 23rd. The Hydrogen Codes will be heard around September 17th and 18th, subject to change.

Karen Hall pointed out that C&S scheduling during September would be difficult and participants should be aware of a number of key events being held simultaneously. There is a DOE Hydrogen Permitting Workshop, NextEnergy Codes & Standards Conference, SAE C&S meetings, and HySafe meeting during the same time frame as the ICC Final Action Hearings.

9.0 REPORT ON NFPA ACTIVITIES

Paul May reported on NFPA being on the 2010 revision cycle, entering the cycle last month. The draft is coming together, on schedule, for public review in October. The review period will be six weeks, closing December 1, 2008. The Committee will meet in Pittsburgh in February to discuss the comments.

NFPA 853 is meeting next week to discuss proposals.

10.0 REPORT ON THE DOE/NREL/NASFM/NHA/USFCC "HFS AND FUEL-CELLS-FOR-BACKUP-POWER FOR TELECOMMUNICATIONS PERMITTING" WORKSHOP

Carl Rivkin provided an update regarding the planned workshops. The workshop will be an interactive process where a "permitting tool" will be developed during the workshop, tailored to their particular jurisdiction. The California Fuel Cell Partnership, along with NASFM will coordinate the work. The next workshop will be held on August 25th and 26th at Cal State Los Angeles. Another workshop will be held on September 17th and 18th in Detroit at NextEnergy. Tony Androsky will give a presentation on fuel cells.

11.0 REPORT ON IEC/TC105 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE

Kelvin Hecht provided an update on IEC TC 105 current issues. The following published standards are going into their maintenance cycle and are soliciting comments:

- Fuel Cell Modules
- Stationary Fuel Cell Power System Safety
- Stationary Fuel Cell Power System Installation

Portable Fuel Cells, Safety; and Stationary Fuel Cells, Performance will meet in October to consider comments on these standards.

TC105 – Fuel Cell Technologies

- Working Group #2 Fuel Cell Modules
 - TC105 has requested comments to IEC 62282-2 for the next revision cycle.
- Working Group #3 Stationary Fuel Cell Power Systems - Safety
 - TC105 has requested comments to IEC 62282-3-1 for the next revision cycle.
- Working Group #4 Stationary Fuel Cell Power Systems – Performance

- Meeting in Geneva October 14 -15
- Working Group #5 Stationary Fuel Cell Power Systems - Installation
 - TC105 has requested comments to IEC 62282-3-3 for the next revision cycle.
- Working Group #7 Portable Fuel Cells
 - Meeting in Geneva October 16-17
- Working Group #8 Micro Fuel Cells – Safety
 - US Experts are working to complete FDIS for publication.

WWW.fuelcellstandards.com - Activity Report

- July statistics
 - Visits - 8,076
 - pdf download - 639



12.0 REPORT ON ISO/TC197 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE

Glenn Scheffler provided an update. Two documents are out for ballot:

- *ISO/DIS 15869.3, Gaseous hydrogen and hydrogen blends—Land vehicle fuel tank*
At our request, the ballot was extended from 2 to 5 months. U.S. TAG comments were due by 2 July 2008. The ballot concludes 26 August 2008. The US is moving towards a "NO" vote.
- *ISO/DIS 16110-2, Hydrogen generators using fuel processing technologies—Part 2: Procedures to determine efficiencies*
U.S. TAG comments were due by 14 July 2008. The ballot concludes 11 September 2008. The response had been limited, but the vote appears to be moving toward a "NO" vote.

Participation on working group

WG #5 - The group has started up work again on fuelling devices. Experts are needed to serve on ISO/TC 197/WG 5 on the revision of ISO 17268:2006, Compressed hydrogen surface vehicle refuelling connection devices. The working group has been reactivated and the U.S. TAG is looking for experts who want to participate. The last meeting of WG 5 was in the Munich area 29-30 July 2008. Nobody from the US attended the last meeting.

WG #11 - Ken Krastins asked about WG #11 on refuelling stations. Glenn assured the group that they are working regularly on the topic. They met in Australia recently. They approved their draft as a Technical Specification. Redrafting is in progress. The document is ISO TS 20100: Gaseous Hydrogen Fuelling

Stations. The US and Japan voted "NO", but the TS passed and has been published. They are hoping to have a CD in December. Two areas of concern have been identified:

- Setback distances
- Dispenser Safety (overpressure, overflow, and others)

13. OPPORTUNITY FOR CDOs AND SDOs TO REPORT ON THEIR ACTIVITIES

13.1 NIST

a. Report on NIST activities – Juana Williams

Juana Williams provided an update. Air Products will host the next meeting Aug. 26/27 in Allentown Penn. Both subcommittees will meet. The Sept 23rd through Sept. 25th workshop will also be held, however the August 12-14, 2008 workshop was cancelled due to a high number of scheduling conflicts for participants.

An important outcome of the recent meetings is that the Regional Weights and Measures Associations will meet early next year and will actually see items to add a hydrogen method of sale and hydrogen fuel quality to the existing codes. NIST handbook 44 will also be proposed to be revised to include hydrogen. Dynamic measuring devices for cryogenic liquids, for liquid hydrogen, is overdue for revision and revision will start shortly. Please see detailed update below.

A Discussion Paper Describing a Proposed Method of Sale and Quality Specification for Hydrogen Vehicle Fuel (06AUG2008) was also provided by Juana for the minutes. It can be found in **Attachment A** of these minutes.

National Institute of Standards and Technology (NIST), Weights and Measures Division (WMD)
Report on the Development of Commercial Hydrogen Measurement Standards to the NHFCCSCC
August 6, 2008

1. U.S. National Work Group (USNWG) for the Development of Commercial Hydrogen Measurement Standards
Air Products and Chemicals, Inc., has agreed to host the August 26-27, 2008 meeting of the USNWG in Allentown, PA. The USNWG Subcommittees will meet from 8:30 a.m. to 5:00 p.m. The Device Standards and Test Procedures Subcommittee will continue its work on the draft code. Tentative plans are for the Fuel Specifications Subcommittee to meet the afternoon of August 27 to discuss the draft fuel specification standard, units of measurement, and other terminology in the paper "The Starting Point: A Discussion Paper Describing a Proposed Method of Sale and Quality Specification for Hydrogen Vehicle Fuel." (See paper appended below)
2. Upcoming Workshops on Commercial Hydrogen Measurement Standards
NIST WMD has cancelled one of two Workshops on Commercial Hydrogen Measurement Standards at its Gaithersburg, Maryland campus. The August 12-14, 2008 workshop was cancelled due to a high number of scheduling conflicts for participants. The September 23-25, 2008 will be held to familiarize state, county, and local weights and measures officials with the ongoing work on hydrogen- measuring devices and other legal metrology codes, refueling equipment, fuel cell vehicles, safety, properties, and other relevant facts.

NIST WMD is still seeking experts on hydrogen safety and properties who are available as presenters in the workshops.

If you have questions or are interested in presenting at the workshops please contact Juana Williams by email at juana.williams@nist.gov or by telephone at 301-975-3989.

3. July 2008 National Conference on Weights and Measures (NCWM) Annual Meeting
The 93rd Annual Meeting of the NCWM was held July 12-17, 2008 in Burlington, Vermont. The Specifications and Tolerances (S&T) Committee and Meter Manufacturers Association¹ were briefed on the status of national and international work to develop commercial hydrogen measurement standards. These groups were encouraged to provide input on the appropriateness of these standards as the work progresses and to help establish a U.S. position on corresponding international standards. Discussion are underway for placing a developing item on the S&T and Laws and Regulations Committee agendas in all four U.S. regional weights and measures associations. This step introduces the entire weights and measures community to proposals under development for legal metrology requirements for hydrogen refueling equipment, method of sale, and engine fuel quality. The Vermont Partners for Sustainable Transportation provided an excellent opportunity for 19 members of the NCWM to participate in a technical tour of the Vermont hydrogen station and vehicle.

4. Development of International Standards
As the Secretariat for International Organization of Legal Metrology (OIML) Recommendation 81 "Dynamic Measuring Devices and Systems for Cryogenic Liquids" (1998) the United States has established a new timeline for revision of the document. September 2008 is targeted as the date for distribution of the first committee draft to U.S. and international stakeholders for comment.

1 Meter Manufacturers Association (MMA) is a group of U.S. meter and related equipment manufacturers reorganized in 1976 to work to promote a better understanding of metering systems and their use through education, by addressing technology issues, and promoting uniformity in national standards and through harmonization with international legal metrology requirements.

b. Report on CSA America Activities - Julie Cairns

Julie provided an update by E-mail from China. The standards that Julie Cairns had previously indicated would be published are now at ballot. See <http://www.hydrogenandfuelcellsafety.info/2008/feb/csa.asp> for details on these standards. Comments have been received from the Committee members during the ballot phase. Everyone is working to address comments and then the documents will be published as TIR's. Work continues to complete the draft of HGV 4.3 in the September timeframe to coordinate with J2601.

c. Report on SAE Activities – Mike Steele

Mike Steele provided an update. September 16th, 17th, 18th meetings are coming up. The Safety Working Group is working on their documents. Their current revision efforts should be submitted to SAE shortly. It is hoped that these will be included in the GTR process. J2578 will be included. J2579 will also be included.

d. Report on cargo shipment of fuel cell vehicles – Robert Wichert

Robert Wichert provided an update on USFCC efforts to update the United Nations Sub-Committee of Experts Recommendations on the Transport of Dangerous Goods, Model Regulations, to include fuel cell vehicles. Karen Hall asked to be added to the contact list distribution.

14.0 OPEN DISCUSSION AND OTHER ISSUES

a. Establishing a Relationship with National Conference of States on Building Codes and Standards (NCSBCS)

Russ Hewett's recommendation: NREL Hydrogen Program become a Government Member (Annual fee of \$100) and the HFCCSCC utilize NCSBCS resources through NREL. The Committee endorsed this approach. Chad Blake has researched the issue of who could use the site, but has not received any response.

b. Availability of Case Studies to aid industry in permitting

Karen Hall provided an update. The case studies for refuelling stations are available on the DOE hydrogen education web site. Case studies for telecom backups and other stationary fuel cells are still needed. Carl Rivkin noted that some of these have just recently been added to the online database. Karen asked whether contact details for permitting officials that have approved projects would be available. Some members of the hydrogen industry are looking for resources to aid in permitting new installations. Chad agreed to look into this. Bill Hoagland reported that some case studies are on www.ieah2safety.com [reports] .See

also hydrogen.energy.gov[codes & standards].

c. NHA Board request to explore possible benefits of NFPA Board membership

NHA is exploring the possibility of NHA members being on the NFPA Board. Karen asked Paul May if he could provide any information about the roles and responsibilities for NFPA Board members.

d. Retrospective Analysis of HFCCSCC

- Is it operating the way we think it should?
- Proposals for modifications?
- The Committee will hold this on the agenda for a few meetings.

15.0 NEXT MEETING

The next meeting will be a teleconference meeting as follows:

- DATE: September 3rd
- TIME: TBA