

## **MINUTES OF THE SEPTEMBER 2008 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE**

**MEETING DATE: September 3, 2008**  
**MEETING TIME: 3:00 – 4:30 PM (EDT)**  
**FACILITATOR: Karen Hall**

### **1.0 ROLL CALL - Karen Hall**

Present on the call:

Karen Hall	Mike Steele
Paul May	Gary Nakarado
Glenn Schleffler	Ken Krastins
Jill Thompson	Carl Rivkin
Andrea Zajac	Rhoads Stephenson
Bill Collins	Juana Williams
Amily Chuang	Joel King - guest
Chad Blake	Robert Wichert
Jackie Birdsall	Antonio Ruiz
Jim Ohi	

Karen Hall facilitated the meeting.

### **2.0 REVIEW OF USFCC ANTITRUST GUIDELINES - Tony Androsky**

USFCC members were asked by Tony Androsky 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**

No comments. Approved as drafted.

### **4.0 OPPORTUNITY FOR DOE/HQ REPRESENTATIVE TO PROVIDE LATEST INFORMATION ON WHAT'S GOING ON AT DOE - Antonio Ruiz**

Antonio Ruiz provided an update. Part of the Hydrogen Program, that includes Codes and Standards, will be moving to Vehicle Technologies next year. There has been some additional federal funding added to the 2009 budget during the appropriations process.

Some recent highlights of the DOE program include the recent permitting workshops. The next permitting workshop will be in Detroit in conjunction with the Codes & Standards Workshop. There is an upcoming Global Technical Regulations meeting in Tokyo.

[www.hydrogen.energy.gov/permitting](http://www.hydrogen.energy.gov/permitting) has been revamped to make it more effective.

## **5.0 OPPORTUNITY TO DISCUSS THE CALIFORNIA HYDROGEN FUELS PROJECT'S EFFORTS TO DEVELOP A HYDROGEN STANDARD - John Mough**

The California regulations go into effect on September 11th.

## **6.0 OPPORTUNITY FOR GARY CASTRO TO PROVIDE STATUS REPORT ON THE CALIFORNIA HYDROGEN FUELS PROJECT'S EFFORTS TO DEVELOP A HYDROGEN FUEL DISPENSER STANDARD – Gary Castro, Norm Ingram**

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

## **7.0 REPORT ON SAE EFFORTS ON 70 MPA CONNECTION DEVICES - Joel King**

Joel King provided an update on the SAE work regarding 70 MPa connection devices. The SAE documents will be revised to address intentional incompatibility to avoid putting a high pressure hose into a lower pressure vehicle. Communication systems may not be available for these safety functions. Unintentional mis-connection has occurred on natural gas vehicles. The SAE fuel cell vehicle standards meeting on September 17th will cover this topic. There are a variety of opinions regarding the level of safety that is necessary to prevent over pressurization of the vehicle tanks.

## **8.0 REPORT ON HYDROGEN INDUSTRY PANEL ON CODES (HIPOC) ACTIVITIES – Karen Hall**

ICC Final Action Hearings will be held from September 14th through September 23rd.

The Hydrogen Codes will be heard around September 17th and 18th, subject to change.

The HIPOC meeting for today was cancelled. It has not been re-scheduled yet.

Carl Rivkin reported that Marty Gresho intends to attend the ICC Final Action Hearings.

## **9.0 REPORT ON NFPA ACTIVITIES – Paul May**

### **a. NFPA 52**

The proposed separation distance table did not pass. Efforts are in process to re-address the issue. NFPA 55 retains the responsibility for hydrogen separation distances. The proposed NFPA 52 Table deviated from the NFPA 55 material that must be used, therefore the proposed table should never have been brought up for a vote. The only option that NFPA 52 has is to either extract the separation distances material from NFPA 55 or reference NFPA 55. The option to write new different requirements is not available.

### **b. NFPA 2**

Paul May provided an update on the work in progress.

### **c. NFPA 853**

Robert Wichert provided an update. The NFPA 853 Report on Committee Action on Proposals is out for vote.

## **10.0 REPORT ON PLANNING FOR NEXT DOE/NREL/NASFM WORKSHOP ON PERMITTING HFS PROJECTS AND TELECOMMUNICATIONS PROJECTS USING FUEL CELLS FOR BACKUP POWER – Carl Rivkin**

Carl Rivkin provided an update. The California workshop went well. There will be more workshops in California, perhaps at UC Irvine.

The next workshop will be in Detroit. Michigan has promulgated state regulations for hydrogen fuelling

stations. The process is well integrated at the state-wide level in Michigan. The Detroit workshop will be an opportunity to make the regulations more widely known. Massachusetts is considering writing hydrogen rules too. Bill Collins suggested that Connecticut might also be interested in such a program.

If you have any interest in bringing permitting workshops to your area, please contact Carl Rivkin.

## **11.0 REPORT ON IEC/TC105 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE – Kelvin Hecht**

- **TC105 – Fuel Cell Technologies Update from Kelvin Hecht**
  - Comments requested for the next revision cycle
    - IEC 62282-2 (Fuel Cell Modules)
    - IEC 62282-3-1 (Stationary Fuel Cells-Safety)
    - IEC 62282-3-3 (Stationary Fuel Cells-Installation)
  - Working Group #4 Stationary Fuel Cell Power Systems – Performance -- Meeting in Geneva: October 14 -15
  - 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 the FDIS for publication.

### **Www.fuelcellstandards.com Calendar**

#### **September**

16-18 SAE Fuel Cell Standards  
17-23 ICC Final Action/Changes to '06 Editions  
17-18 NREL Permitting Workshop  
18-19 NextEnergy Codes & Standards Conference  
22-24 NHA Fall Forum 2008

#### **October**

14-15 IEC 62282-3-2  
16-17 IEC 62282-5-1  
20 ISO TC22/SC21 WG2  
20-22 ISO TC22/SC21 WG1  
22 ISO TC22/SC21 Plenary

27-31 Fuel Cell Seminar

## **12.0 REPORT ON ISO/TC197 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE AND ACTIONS ARISING FROM US TAG MEETING – Glenn Scheffler**

### **September 2008 Update U.S. TAG for ISO/TC 197, Hydrogen technologies**

#### **1. Currently out for vote**

5. 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.
6. ISO/FDIS 16111 is out for vote, concluding October 3, 2008.

October 8 is set tentatively for a TAG meeting to discuss ISO/ FDIS 16111.

## **2. Recently closed vote**

7. 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. The ballot concluded 26 August 2008. The U.S. TAG voted disapproved with comments. The standard was ultimately disapproved by the entire Technical Committee.

## **3. WG11 Meeting on Filling Stations**

Meeting scheduled for November 6 and 7 in The Hague to discuss setback distances and dispenser protections.

## **13. 0 OPPORTUNITY FOR CDOS AND SDOS TO REPORT ON THEIR ACTIVITIES**

### **a. Report on NIST activities – Juana Williams**

Juana Williams provided an update on the U.S. National Work Group (USNWG) for the Development of Commercial Hydrogen Measurement Standards meetings held on August 26 and 27. The NIST Handbook 44 paragraphs that would apply to field testing of hydrogen dispensers were discussed. The fuel specification sub-committee also met at the same time. Agreement has been reached on NIST 330 and 811. Labelling and signage have been discussed. Pricing signage was also discussed. It has been agreed to use "MPa" for pressure labelling. The MPa rating will go with the Hydrogen "**H**" for labelling. If you have test procedures for accuracy verification that might be used in this effort, please send them to Dane Lee at NIST at [diane.lee@nist.gov](mailto:diane.lee@nist.gov).

Gravimetric, volumetric, and master metering have been identified as possible methods verification methods.

Early to mid November, is tentatively scheduled for the next meeting of the National Group on Hydrogen Metering.

### **Juana Williams also provided the following report by E-mail:**

08/07/08 6:55 PM

Dear Colleagues,

As Secretariat of Technical Committee 8 Subcommittee 6 (TC 8/ SC 6) the United States has established a new timeline for the project to revise International Organization of Legal Metrology (OIML) Recommendation 81 (R 81) Dynamic measuring devices and systems for cryogenic liquids (1998). NIST WMD is providing this information to U.S. stakeholders who will observe or elect to be part of the work to establish a U.S. position on R 81. The new timeline and corresponding tasks are outlined below along with a brief history of events in the past ten months and background information on the OIML standards development process.

#### **New Timeline:**

*September 2008*

Project 1: Revision of OIML R 81 – Secretariat prepares and distributes the 1st Committee Draft (1CD) to the TC 8/SC 6 members and U.S. National Work Group (USNWG) for comment.

*December 2008*

Deadline for TC 8/SC 6 and USNWG to send comments to the Secretariat.

*January 2009*

Secretariat distributes comments on 1CD and prepares and distributes a 2nd Committee Draft (2CD) for comment, or a 2CD for vote, and/or calls for a meeting.

*April 2009*

Deadline for TC 8/SC 6 Members and USNWG to send comments and/or vote on 2CD to the Secretariat and/or to meet.

**Project History:**

In October 2007 the CIML approved the TC 8/SC 6 recommendation to revise R 81 (1998). March 2008 was identified as the target date for distribution of the 1CD to include:

- new ISO and IEC Standards as recommended in OIML D 11 (2004),
- new developments in hydrogen measurements,
- revise density equations, and
- any other remaining relevant standards and national documents.

**Upcoming Revision:**

In April 2008 TC/SC Secretariats received OIML training to facilitate drafting of OIML Recommendations. The OIML training provided:

- guidelines on the general design of the document
- a refresher on the directives which are the basis for technical work
- resources for vocabularies, units of measurement, prescribed and mandatory text, etc.
- a new template that includes requirements for electronic equipment

The Secretariat will incorporate these details and use the new template in drafting the 1CD to ensure uniform implementation of the appropriate requirements for this application to the greatest extent possible.

NIST WMD looks forward to working with the USNWG and receiving comments on the 1CD. Please contact me at [juana.williams@nist.gov](mailto:juana.williams@nist.gov) if you have suggestions, questions, or concerns about the project, process, or new timeline.

**b. Report on CSA America Activities – Julie Cairns**

Julie Cairns was not on the call. Karen Hall told the group that Connie Bielawski will be providing a primer article on the IEC/TC 105 purpose, scope and status for the Hydrogen & Fuel Cell Safety Report.

**c. Report on SAE Activities – Mike Steele**

Mike Steele provided an update. The SAE Fuel Cell Working Groups are meeting on September 16, 17 and 18 plus meetings on J2601 on September 15th. J2600 is a "Hot Topic" J 2578 is not yet ready for ballot and will be discussed during the September meetings. J2678 and J2679 should be available for the GTR proceedings.

**d. ASTM Update – Jackie Birdsall**

ASTM D03.14 UPDATE:

Work item 9211 "Standard Test Method for Ion Chromatography Based Determination of Cations in Hydrogen and Other Fuel Cell Feed Gases" ballot closed on September 2, waiting on closing report. We expect work item 9688 "Standard Test Method for Determination and Sampling of Particulate Matter in High Pressure Hydrogen used as a Gaseous Fuel with an In-Stream Filter", "Standard Test

Method for the Characterization of Particles from Hydrogen Fuel Streams by Scanning Electron Microscope”, and “Standard test method for gravimetric and microscopic measurement of particulates in hydrogen fuel” to go to ballot by the end of September.

The 70 MPa Hydrogen Quality Sampling Adapter (HQSA) testing was completed at Powertech on August 20 and 21st and acknowledged as acceptable for 70 MPa applications. It will be shipped back to GTI and ready for field testing on September 19th. We are currently looking for a 70 MPa station owner/operator to give us permission to sample hydrogen using the 70 MPa HQSA at their station.

For questions please contact D03.14 Chair Jacquelyn Birdsall at 916.375.7421 or [jbirdsall@cafcp.org](mailto:jbirdsall@cafcp.org).

## **14.0 OPEN DISCUSSION AND OTHER ISSUES**

### **a. Joint Hydrogen Quality Task Force – Jim Ohi**

Jim Ohi provided an update. WG #12 will be meeting in Tokyo on September 24 and 25, 2008. The purpose of the meeting is to review the Technical Specification for conversion to an International Standard. The American Team is compiling test data on contaminant testing. Japanese PSA testing results will be discussed at the meeting. The first Committee Draft of the International Standard should be an outcome of the meeting.

JHQTF has been used as a format for common networking on the testing being done. The University of South Carolina low concentration CO testing is complete. Clemson and Savannah River is completing their anode testing. NIST has completed a test stand re-work and they have joined the Round-Robin testing. Argonne provided a modelling presentation. Cell modelling is also being investigated.

NIST is working on calibration gases for instrumentation. The next meeting will be held on October 9, 2008.

### **b. Hydrogen vehicle shipping regulations work going on at the United Nations – Robert Wichert**

USFCC is proposing changes to the UN Model Regulations for the cargo shipment of vehicles (UN 3166) to cover fuel cell vehicles. The approach is to get fuel cell vehicles covered by the UN Model Regulations and to develop appropriate guidance for fuel cell vehicles at the International Civil Aviation Commission. Copies of the papers can be accessed at <http://www.unece.org/trans/main/dgdb/dgsubc/c32008.html>

### **c. Updates to the shipping regulations for hydrogen going on at the United Nations -- Robert Wichert**

USFCC is proposing changes to the UN Model Regulations for the cargo shipment of hydrogen stored in metal hydride (UN 3468) to allow shipment of metal hydride storage systems that meet ISO 16111 rather than requiring individual country by country approvals. Copies of the papers can be accessed at <http://www.unece.org/trans/main/dgdb/dgsubc/c32008.html>

### **d. Benefits of NFPA Board membership -- Paul May**

It has been determined that NFPA Board membership is not appropriate for advancing code changes in support of hydrogen technologies. Participation in the Technical Committees remains the best way to achieve this objective.

### **e. Retrospective Analysis of HFCCSCC**

- Is it operating the way we think it should?
- Proposals for modifications?

Antonio Ruiz suggested identifying ways to ensure participants have some form of written reminder when time-critical items are reported. This is to avoid missing the opportunities presented while

waiting to review draft minutes. Karen Hall agreed to send the group the written reports received in a new version of the agenda the day after the call this month, and work to ensure more reports are received in time to include in the agenda in advance of the meeting.

## **15.0 NEXT MEETING**

- ***Teleconference Meeting on October 1st.***