

MINUTES OF THE AUGUST 2009 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE

MEETING DATE: August 5, 2009

FACILITATOR: Robert Wichert

1. Roll Call - Robert Wichert

- [Participants](#) (11Kb PDF)

2 Review of Anti-Trust Guidelines - Robert Wichert

Robert Wichert reminded USFCC members of the Council's antitrust guidelines.

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

3. Review of/Corrections to Draft Minutes of July 2009 Teleconference Meeting - Robert Wichert

There were no proposed revisions for the draft minutes from the July teleconference meeting. The minutes were therefore approved as is. Karen Hall noted that the June minutes as well as the July minutes would be posted in the August *Hydrogen and Fuel Cell Safety Report*.

4. DOE/HQ Update - Antonio Ruiz

Antonio sent his apologies for not being able to attend. Chad Blake read an e-mail update. There is presently no update on 2010. The only thing we know at this time is that Congress seems to be considering additional funds for the Fuel Cells Technologies Program: a \$153M House mark and a \$190M Senate mark. Conference will likely occur in mid-September so we really will not know if these numbers will stick.

Antonio also wanted to remind the group about ICHS3, September 16-18 in Ajaccio- Corsica, France. The website is <http://conference.ing.unipi.it/ichs2009/>.

5. California Hydrogen Standards - John Mough

John Mough was not present on the call. Jackie Button and Juana Williams noted that NIST is working in conjunction with the published California regulation, which is an interim ruling. Once an ANSI-approved national standard is in place for hydrogen quality, this will take precedence. Work at SAE and ISO is continuing. ASME and NIST are working on the measurement techniques and standards as well as weights and measures. In the meantime, hydrogen can still be sold. Metering technology is being developed through the National Working Group. In California, testing is happening based on draft techniques. Quality is based on contracts between the OEMs and hydrogen suppliers. The quality effort is moving along, and metering technology is becoming the critical need. The cost to develop a prototype meter is high, and manufacturers feel the market volume does not warrant the multi-million dollar investment. Funding or incentives are needed.

6. Hydrogen Industry Panel on Codes (HIPOC) Activities - Bob Boyd / Glenn Sheffler

HIPOC has been focused on the issues at NFPA, which will be reported next.

7. NFPA Activities - Paul May

The appeal made by Larry Fluer, and supported by three members of HIPOC, has been made to the Standards Council. The appeal is to resolve the conflict created by the VAF Technical Committee's failure to pass the motion to replace the separation distance table for bulk hydrogen with the one adopted by NFPA

55. The motion passed the floor vote at the NFPA hearings, however it narrowly failed to receive the required 2/3 majority by the committee. The issue is now in the hands of the Standards Council, which will have the final ruling. This is expected to be published in the next few weeks.

In the event that the Standards Council does not rule in favour of the appeal to harmonize the requirements, NFPA 2 will have a quandary. As NFPA 2 is an extract document, it will need to deal with conflicting requirements, and cannot resolve this alone. The building codes and fire codes call out the requirements, resulting in a quandary there as well. This could potentially result in different jurisdictions choosing to use different tables.

The NFPA 2 Report on Proposals (ROC) meeting will be held August 19-21 in Pittsburgh, PA to review comments and develop committee proposals.

8. ICC Activities - Darren Meyers

No update

9. DOE / NREL Activities - Carl Rivkin / Chris Moen

Carl Rivkin gave an update on activities at NREL.

DOE and NREL are involved in a gap analysis – looking at vehicle C&S, ensuring that we understand them and can identify the gaps. This analysis is scheduled to be completed by the end of the current Fiscal Year.

The NREL sensors testing laboratory is now functional. NREL is testing sensors for the DOE benchmark performance criteria published in April 2007. NREL has also become involved in the activity to develop an ISO/TC 197 Draft International Standard for Hydrogen Detection Apparatus.

NREL will be presenting a couple of papers at the International Conference for Hydrogen Safety.

The Permitting Workshops are continuing, expanding to include other renewable energy technologies. Tentative plans are as follows:

1. September 22, 2009 Hartford CT partnering with the Connecticut Fuel Cell Alliance
2. Sept 29, 2009 San Antonio, TX partnering with the City of San Antonio
3. October 16, 2009 Tampa, FL partnering with the Florida Fire Bureau
4. November 13, 2009 New Orleans, LA partnering with the Jefferson Parish Fire Department

NREL will be setting priorities once the DOE Hydrogen budget is determined.

Chris Moen provided a brief update on activities at Sandia.

There are presently two activities in hydrogen ignition testing. Sandia is working on refining measurements and theory. Also auto-ignition: New tests will be conducted next month at the SRI site. Sandia is also studying hydrogen releases in tunnels – event trees and consequences in preparation for an NFPA 502 meeting in September. Tests are planned in October/November in a small-scale tunnel.

Sandia is working on a materials compatibility project – looking at fatigue crack growth in materials handling vehicles.

Sandia has recently been awarded capital money for expanding their capability and environmental range.

Sandia will be presenting eight papers at the International Conference on Hydrogen Safety.

10. Report on IEC/TC105 Activities – Kelvin Hecht

Kelvin advised that several standards items are now open for review, comment and voting.

105/244/CD - COMMITTEE DRAFT (CD) for IEC 62282-2, Ed.2

Fuel cell technologies - Part 2: Fuel cell modules

105/242/CD - COMMITTEE DRAFT (CD) for IEC 62282-5-1 Ed.2

Fuel cell technologies - Part 5-1: Portable fuel cell power systems - Safety

105/241/DTS - DRAFT TECHNICAL SPECIFICATION - IEC TS 62282-7-1 Ed. 1

Fuel cell technologies - Part 7-1: Single cell test methods for polymer electrolyte fuel cell (PEFC)

105/240/CD - COMMITTEE DRAFT (CD) - IEC 62282-3-3 Ed.2

IEC 62282-3-3: Fuel cell technologies - Part 3-3: Stationary fuel cell power systems - Installation

In addition, a questionnaire is out from IEC/TC 105 on the interest of participating countries in prospective new work item topics, including one on materials handling FCVs. This announcement prompted a very active discussion from participants, who noted that the previous questionnaire, which had very little interest from US industry, did not include this latest topic. Participants noted that fork lift vehicles is a spontaneous market that is developing rapidly, causing industry to take an active interest in the codes and standards relating to the vehicle storage tanks and indoor refueling. Because of this, several industry groups have noted the need to better understand the cycling these tanks experience, and ensure that tanks meet the necessary performance criteria. For example, UL 2267 may need to be revised to account for the increased cycling that these applications experience. HGV and other committees are beginning to address the issues. Participants on the call noted a greater need for coordination on this issue and that there is currently more focus on the US codes and standards than starting a new international work item. IF an international effort were to begin, the US would like to be involved and to have something to bring to the table. Robert Wichert suggested that as the topic has so much interest, perhaps we can appoint a topic leader to be added to the agenda for next month, and to consider a separate web-based conference on this topic alone for all interested stakeholders. Aaron Harris agreed to take on that role, and will present an update during the September teleconference meeting.

Kelvin agreed to send the questionnaire to the NHFCCSCC.

- [Kelvin's Report](#) (40Kb PDF)

11. Report on ISO/TC197 Activities – Glenn Scheffler / Jill Thompson

Vote recently closed

- **ISO/CD 17268, Compressed hydrogen land vehicle fueling connection devices**
The U.S. TAG voted "Disapprove" and submitted 9 comments.
Compiled comments from the P-members of ISO/TC 197 and the P-members of ISO/TC 22, Road vehicles, were distributed by the ISO TC/197 Secretary.

Past meetings

- **WG 8, Hydrogen generators using water electrolysis process**
Meeting date: July 2
Location: Montreal, Canada
Work item: ISO/CD 22734-2, Hydrogen generators using water electrolysis process — Part 2: Residential applications

- **WG 11, Gaseous hydrogen – Service stations**
Meeting date: July 3
Location: Montreal, Canada
Work item: ISO/WD 20100 - Gaseous hydrogen – Fuelling station

Future meetings

- **U.S. TAG Meeting**
Meeting date: August 27, 9:00 AM to 3:00 PM
Location: CGA's office, Chantilly, VA
US TAG members who are unable to participate in person are asked to inform Jill so that she can send the call-in instructions.
- **Plenary Meeting**
Meeting date: October 14 (WG meetings on October 12-13 - TBD)
Location: Seoul, Korea
Host: Republic of Korea (KATS)

12. NIST Activities – Juana Williams

U.S. National Work Group (USNWG) for the Development of Commercial Hydrogen Measurement Standards

The USNWG will hold an in-person meeting August 11-13, 2009 at the NIST Gaithersburg, Maryland campus. Participants may also call-in and/or web conference the 2 ½ day session. The meeting will focus on Draft 4.0 of the NIST Handbook 44 Hydrogen Gas Measuring Devices Code for commercial hydrogen refueling equipment and related applications. The main topics for USNWG discussions are the:

- suitability of proposed equipment performance tolerances,
- development of strategies for gathering additional test data and analyzing the uncertainties associated with various test procedures under consideration by the USNWG to:
 - determine the appropriateness of the proposed tolerances, and
 - establish guidelines for selecting a test procedure(s) and test equipment
- applicability of the draft code to the pressure-volume-temperature and other methodologies used for hydrogen measurement

A joint meeting of the USNWG and CSA/HGV 4.3 will begin at 1:00 p.m. (EST) August 12, 2009. The groups will meet to discuss the direction of work to develop a single test standard capable of evaluating the equipment's ability to attain proposed NIST Handbook 44 accuracy tolerances and to avoid over heating and over pressurization during deliveries of hydrogen into a vehicle's fuel storage tank.

The USNWG will establish a position on the readiness of the proposed commercial hydrogen refueling equipment, fuel quality, and method of sale requirements. The USNWG plans to provide input and updates on the requirements by September 2009 to the fall regional weights and measures conferences in time for the 2010 national standards development process.

13. CSA America Activities – Julie Cairns/ Connie Bielawski

No update

14. SAE Activities – Mike Steele / Glenn Scheffler

There was a meeting in July. The Interface Working Group responsible for J2600 has had a recent change in sponsorship from Joel King to George Mitchell. Progress is anticipated. The J2601 sponsor is looking to get a vote out in September. There are two meetings left this year. SAE 2719 (Hydrogen Quality) has been

monitoring the data on the North American Hydrogen Quality Task Group calls.

The Safety Working Group has initiated coordination calls with CSA on tank issues. A MOU is now in place, with good coordination and several members in common. The September meeting will start on Monday afternoon, for a day and a half to evolve the document and try to reach consensus.

15. ASTM D.03 Activities – Jackie Button

Jackie walked through the ASTM activity matrix, and noted that progress has continued since the draft agenda went out.

- [Jackie's Report](#) (51Kb PDF)

16. NHA Activities – Karen Hall

The NHA Board of Directors has agreed to move forward with three critical activities in August while the NHA's contract moves forward at DOE:

- The August Hydrogen and Fuel Cell Safety Report
- The NFPA 2 meeting in Pittsburgh
- The C&S Workshop in India August 29th, in conjunction with the World Hydrogen Technologies Convention
 - [Draft agenda and registration form](#) (267Kb PDF)

17. USFCC Activities – Sondra Ullman/ Robert Wichert

The USFCC is preparing several papers for submission to the International Civil Aviation Organization (ICAO). These papers relate to the shipment of fuel cell cartridges, fuel cell systems, fuel cell vehicles, fuel cell engines and hydrogen stored in metal hydride assemblies. Last year the UN accepted ISO 16111 for shipping hydrogen stored in metal hydrides and this issue is now moving to ICAO to move these requirements into the air mode. There is an August 7 deadline for submission of the papers to ICAO and the USFCC will be submitting them this week. The ICAO meeting where these proposals will be considered is in October.

There is also a current issue at the United Nations about whether fuel cells and batteries should be in the same UN Classification or Chapter. This will be the subject of discussion in the next few weeks in preparation for the UN meeting in December.

18. Open Discussion

Next meeting: Conference call on Wednesday September 2nd.