

**National Hydrogen and Fuel Cell Codes and Standards Coordinating Committee
(NHFCCSCC)**

Wednesday, March 7th, 2012
TIME: 3:00 – 4:30 pm (Eastern Daylight Time)
<https://www1.gotomeeting.com/register/926143920>
Dial: 1-218-936-4141
Access Code: 4502347#

Attendees:

Aaron Harris	Josip Novkovic	Norman Ingram
Anthony Amato	Juana Williams	Robert Boyd
Bill Collins	Karen Hall	Spencer Quong
Chad Blake	Kelvin Hecht	Steve Tucky
Connor Dolan	Larry Moulthrop	Thomas Prevish
Jim Ohi	Mike Steele	Tony Androsky
John Mough	Norm Newhouse	Will James

1 Welcome and agenda additions

2 Review of or corrections to February draft minutes

Approved February minutes.

Will continue distribution of draft minutes by email only.

3 DOE/HQ Update

Antonio Ruiz

AMR Presentation due date is March 16th.

Will provide comments and review shortly.

The Codes and Standards session will be held on that Tuesday on the 15th of May. The DOE partners are setting up a schedule for side meetings at the AMR now. A Fuel Quality session will be a workshop on a paper being written, this will likely be an evening meeting. The schedule is being compiled now.

Hotel and lodging information for the AMR is available here,
http://www.annualmeritreview.energy.gov/hotel_travel_info.cfm

Participated in the Fuel Cell Expo in Tokyo. 8,000 visitors to the fuel cell section. It was part of a larger energy expo. Antonio Ruiz gave a plenary presentation.

4 C&S Events and Fuel Cell Safety Information

<http://www.hydrogenandfuelcellsafety.info/>
<http://www.h2incidents.org/>

Karen Hall
Steve Weiner

H2 Incidents March Update provided by Steve Weiner

The most recent safety event posting to H2Incidents.org is called “*Hydrogen Explosion and Iron Dust Flash Fires in Powdered Metals Plant.*” This record can be accessed at <http://www.h2incidents.org/incident.asp?inc=300>. An announcement with more details was sent out to our distribution list [If you wish be to be added to the list, please contact Linda Fassbender (linda.fassbender@pnnl.gov). The database now includes 201 safety event postings with approximately 50 safety events under review and in our backlog.

In related work, we also added a new feature to our “H2BestPractices.org” (<http://www.h2bestpractices.org/>). Archives of our H2 Safety Snapshot bulletin are now available under the References section on each page. PDF files are available for the three bulletins published to date:

- *Identifying Safety Vulnerabilities* (July 2011)
- *Handling Compressed Hydrogen Gas Cylinders* (November 2010)
- *Hydrogen Safety Knowledge Tools* (April 2009)

Feedback comments on these bulletins or suggestions for future topics can be sent to Steven Weiner at snapshot@pnl.gov.”

http://www.fuelcellstandards.com/calendar_new.html

Kelvin Hecht

5 Discussion Topics

Regulatory Matrix Review and Comment

Karen Hall

Karen Hall asked for input to keep the matrix current in advance of the April meeting. She noted in particular a large number of entries for documents which have been published, and asked whether these can now be removed unless there is ongoing work on a revision. There were suggestions, including tracking a code cycle in a finished column, row, or section, or adding a separate table to keep track of published documents, with the date for the next revision cycle.

It was stated that the intent of this document is to track unpublished codes and standards.

All important standards are listed on www.fuelcellstandards.com. To avoid duplication, the matrix will link to this site for information on published documents. Kelvin Hecht will add a new comment on his list to include code cycles.

Certification of Hydrogen Dispensing Stations

Robert Wichert

Text provided by Bob Boyd (HIPOC):

HIPOC is has made a proposal to the International Fuel Gas Code to resolve a problem in the fire code (IFC) that can lead the AHJ to classify some modular H2 fueling stations as H-1 occupancies. I share this as an example of how product standards can be referenced in the codes.

In order to provide for specific requirements for portable fueling stations HIPOC has proposed the creation of the following: definition, a new section in IBC section 406.7 Motor Fuel Dispensing Facilities, and a new exclusion in section 415.5 “Fire separation distance” .

New definition:

PRE-ASSEMBLED HYDROGEN FUELING EQUIPMENT UNITS . A self-contained package or factory-matched packages of integrated systems and components for dispensing gaseous hydrogen for hydrogen fuel cell buses, private fleet hydrogen powered industrial trucks and public hydrogen motor fuel dispensing . Units may include hydrogen-generating, compressor, storage and/or dispensing systems and equipment.

New Section:

406.7 Motor fuel-dispensing facilities. Motor fuel-dispensing facilities shall comply with the International Fire Code and Sections 406.7.1 and 406.7.2.

406.7.3 Pre-assembled hydrogen motor fueling equipment units. Pre-assembled hydrogen motor fueling compression, storage and/or dispensing equipment units shall be installed and located in accordance with the International Fuel Gas Code, the International Mechanical Code and the International Fire Code.

New Exception:

415.5 Fire separation distance. Group H occupancies shall be located on property in accordance with the other provisions of this chapter. In Groups H-2 and H-3, not less than 25 percent of the perimeter wall of the occupancy shall be an exterior wall.

Exceptions:

1. Liquid use, dispensing and mixing rooms having a floor area of not more than 500 square feet (46.5 m²) need not be located on the outer perimeter of the building where they are in accordance with the International Fire Code and NFPA 30.
2. Liquid storage rooms having a floor area of not more than 1,000 square feet (93 m²) need not be located on the outer perimeter where they are in accordance with the International Fire Code and NFPA 30.
3. Spray paint booths that comply with the International Fire Code need not be located on the outer perimeter.
4. **Pre-assembled hydrogen motor fueling equipment units as provided for in Section 406.7.3.**

It is my expectation that HIPOC will then propose to add this same definition to the IFC and then provide a reference in the IFC to CSA HG 4.9 as a Hydrogen Fueling Station product certification standard to which PRE-ASSEMBLED HYDROGEN FUELING EQUIPMENT UNITS could be certified, labeled and listed.

Hydrogen Fuel Quality and Measurement

ASTM D.03-14

Jackie Birdsall

No updates at this time.

NIST

Juana Williams & Marc Buttler

No updates at this time.

California DMS

John Mough/Norm Ingram

Norm Ingram: We do have a signed agreement in place with NREL to start fabrication and demonstration of the three different measurement standards. This puts us in a good position to go out and collect data to see which standard is most effective on type evaluation and hydrogen metrology requirements.

A general discussion ensued about the planned project and hydrogen metrology in general. Clarification was provided that NREL will be coordinating to the extent possible with all interested parties, and within its agreement with Ca DMS. In response to questions about hydrogen metrology, clarification was provided by NIST pertaining to the tentative measurement code process, history and process as follows. "If anyone wants to come forward with data or an issue with the draft code, they can bring them to the U.S. National Work Group for Weights and Measures Standards. If you would like to be included in the work group, please contact Juana Williams."

6 Codes and Standards Organization Updates

IEC TC 105

- **WG#1 (IEC/TS 62282-1 Ed.3 – Terminology)**
 - 2012 revision initiated.
- **WG#2 (IEC 62282-2 Ed.2 – Fuel Cell Modules)**
 - Approved. USTAG voted to approve with editorial comments.
 - To be published shortly.
- **WG#3 (IEC 62282-3-100 – Stationary Fuel Cells - Safety)**
 - Approved. Published February 16, 2012.
- **WG#4 (IEC 62282-3-201 Ed.1 – Stationary Fuel Cells – Performance for small fuel cells)**
 - CDV posted for vote and comments. Comments to USTAG by May 31, 2012.
 - WG to meet June 2-4 in Frankfurt, Germany
- **WG#5 (IEC 62282-3-300 Ed.1 – Stationary Fuel Cells – Installation)**
 - Approved. USTAG voted to approve with editorial comments.
 - To be published shortly.

- **WG#6 (IEC 62282-4-100 – Fuel Cell Systems for Forklift Applications)**
 - Initial draft under development
- **WG#7 (IEC 62282-5-1 Ed. 2 – Portable Fuel Cells)**
 - CDV approved. FDIS to be posted shortly
- **WG#8 (IEC 62282-6-100 am 1 – Micro Fuel Cells – Safety)**
 - USTAG voted to approve with comments after a TAG teleconference.
 - Germany and Japan have both provided negative vote. The proponents of WG#8 are working to address this.
 - WG met in Golden, CO in February
- **WG#9 (IEC 62282-6-200 Ed.2) Micro Fuel Cells – Performance**
 - CDV was approved. The FDIS will be issued by July 31, 2012.
- **WG#10 (IEC 62282-6-300 Ed. 2 – Micro Fuel Cells – Interchangeability)**
 - CDV posted. Comments to USTAG by March 23, 2012.
- **WG#11 (IEC 62282-7-2 – Single Cell Performance Test Methods for Solid Oxide Fuel Cells)**
 - USTAG submitted comments to CD.
 - CDV to be submitted by December 2012
- **WG#12 (IEC 62282-3-400 – Small Stationary Fuel Cells with Combined Heat and Power Output)**
 - WG met in Sacramento in February
 - Next meeting in Frankfurt July 5-6

There was a question from the group about why IEC has so many standards. Kelvin Hecht noted that IEC only begins a standards activity because they are asked for by at least four separate nations.

ISO TC 197

We do not have a date of the next ISO TC 197 meeting available.

ISO TC 197 has not selected a new chair yet, and as such many actions and meetings have been put on hold though, business was supposed to continue as usual.

Staff will work to have an ISO TC 197 update on the next call.

NFPA

No update.

ICC

No update.

CSA

Josip Novkovic's report on CSA activities is available online at:

[http://www.hydrogenandfuelcellsafety.info/pdf/CSA%20Standards%20Update%20\(02-27-12\).pdf](http://www.hydrogenandfuelcellsafety.info/pdf/CSA%20Standards%20Update%20(02-27-12).pdf)

Others

7 Open Discussion & Other Issues

Next meeting – Wednesday, April 4th, 2012, 3:00 PM EST – 4:30 PM EST.