MINUTES OF THE SEPTEMBER 2010 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE

MEETING DATE: September 1, 2010
FACILITATOR: Robert Wichert

Roll Call

- Attendees (12Kb PDF)

1. Review of Anti-Trust Guidelines - Robert Wichert

Robert Wichert reminded USFCC members to be mindful of the Anti-trust guidelines.

- Antitrust Guidelines (27Kb PDF)

2. Review of/Corrections to Draft Minutes of August 2010 Teleconference Meeting

Approved as written

3. DOE/HQ Update – Antonio Ruiz

Antonio provided an update. The ISO WG 8 meeting is on Sept. 21. The ISO WG 11 meeting is on Sept. 22. The IPHE meeting in Shanghai will follow those two meetings. There will also be a workshop meeting in Beijing on natural gas and Hydrogen blends. Type 4 tanks are being banned in China, except for demonstrations at the World Expo.

Appropriations update: $137M Request; Senate raised this to $174M

DOE is investigating gaps such as:

- Certification is being investigated to better understand where DOE would be able to assist.
- Sensors
- Leak detection technologies
- Insurability is also being investigated

4. Calendar of C&S Events and Fuel Cell Safety Information - Kelvin Hecht and Karen Hall

- http://www.fuelcellstandards.com/calendar_new.html
- http://www.hydrogenandfuelcellsafety.info

5. NHFCCSCC Mission Statement and Meeting Format

Robert Wichert provided the opportunity for members to provide input to the Mission Statement. The following changes were made. Members are encouraged to review these changes and discuss this again next month.

National Hydrogen and Fuel Cell Codes and Standards Coordinating Committee (HFC4)

HHFC4 Mission
The National Hydrogen and Fuel Cells Codes and Standards Coordinating Committee (HFC4) provides a forum for effective communication and collaboration among all stakeholders in the hydrogen and fuel

cells regulations, codes, and standards community. HFC4 leadership will facilitate the development of harmonized, consensus-based, codes and standards that are critical to ensure public safety and to accelerate the commercialization of hydrogen and fuel cell technologies.

HFC4 Strategic Objectives
HFC4 will encourage and facilitate the timely and efficient incorporation of evidence-based hydrogen and fuel cell safety criteria into existing and proposed national and international regulations, codes and standards.

Performance-based and risk-informed approaches will be encouraged where appropriate. HFC4 will promote development of codes, standards and regulations to facilitate technology deployment and commercialization. ~~that establish a minimum level of safety for today and also facilitate without hindering new technology development and future commercialization~~. Performance-based codes, standards and regulations will be encouraged wherever practicable.

HFC4 will also promote development of performance measuring standards that take all applicable technologies into account, without creating any advantage for one or more technologies over others except for the inherent aspects of the various technologies. HFC4 will promote performance measuring standards that compare all technologies in a similar manner without prejudice.

HFC4 will facilitate consensus based codes and standards development by working cooperatively with all stakeholders to take their viewpoints and all technologies into account.

Stakeholders: The community of stakeholders includes codes and standards developers, industry members, technology developers, codes and standards users, architects and engineers, legislative and regulatory bodies that adopt codes, standards and other regulations, safety officials, first responders, and the US Government including the USDOE, USDOT, US EPA, US DOC (particularly NIST), OMB, National Laboratories, hydrogen and fuel cell users and consumers, and others. International stakeholders shall also be taken into account where their products or services might serve the US market.

HFC4 will support and encourage technical and operational consistency among and across the codes and standards developed by different organizations. The HFC4 will provide a forum to list the differences, understand the details, and facilitate consistency.

HFC4 will promote the harmonization of international hydrogen and fuel cell codes, standards and regulations by outreach to and collaboration with the international organizations involved in their development.

HFC4 Charter
HFC4 will convene meetings, in person and using teleconferencing, to allow the productive interaction of stakeholders to achieve these strategic objectives:

- Agendas shall be set beforehand, with input from affected stakeholders;
- Meeting minutes shall be published and accessible on the web at www.hydrogenandfuelcellsafety.info
- Action items for members and affected stakeholders will be tracked and communicated; and
- Smaller working groups may be established to complete specific items within the NHA or USFCC codes and standards committees, depending on topic and staff resources. In this case, a roster of working group members will be reported to HFC4 to facilitate discussion and input from others, and the results of the working group will be reported to the HFC4, as well as provided to the SDO/CDOs.

Wherever possible, in person meetings will be co-located with applicable meetings or conferences to minimize unnecessary travel and maximize opportunities to engage stakeholders. A calendar of upcoming meetings and conferences will be maintained atwww.hydrogenandfuelcellsafety.info and www.fuelcellstandards.com.

HFC4 will provide a forum to discuss standards, proceedings, and rulemakings that are open for input and comment as part of their drafting, review, revision, or approval cycles. Information on how to comment, when to comment, and the process for defending comments will be provided with as much advance notice

as practicable. SDO/CDOs will be encouraged to provide a 90-day notice and logistic details on upcoming comment periods to facilitate industry input.

HFC4 will help establish and communicate priorities and align resources for codes and standards development, and the necessary performance and safety data generation for decision making, with the existing codes and standards development cycles. Criteria will include assessing the potential safety risks and the impact of codes and standards availability on commercialization timelines.

HFC4 will facilitate coordinating and integrating the many global activities in hydrogen codes and standards development to help ensure their consistency and the best use of resources.

HFC4 will work to help familiarize building code and fire safety professionals, local/state/Federal policymakers and other strategic stakeholders (e.g., homebuilders, architects, transportation regulators, users and consumers, etc.) with relevant hydrogen and fuel cell technical and codes and standards information.

HFC4 will support www.fuelcellstandards.com andwww.hydrogenandfuelcellsafety.info to provide up-to-date information on hydrogen and fuel cell codes and standards activities worldwide.www.fuelcellstandards.com will maintain the matrix of ongoing and completed codes, standards and regulations, with status and contact information. www.hydrogenandfuelcellsafety.info will provide minutes of the HFC4 meetings, as well as short written reports of timely safety, codes and standards activities and actions, and emphasize when documents are open for comment, new activities are formed, and opportunities to influence codes and standards are coming up.

HFC4 will identify critical gaps and deficiencies in hydrogen and fuel cell codes and standards and formulate recommendations to address them.

6. CSA Update on FC-1 and HFV 4.10 – Josip Novkovic

FC 1 and HGV 4.10 Update
Stationary Fuel Cell Power Systems, ANSI/CSA America FC 1

- The TAG adopted revisions during its December 10-11, 2009 meeting
- Revisions were distributed for review and comment in March 2010
- Meeting scheduled for September 2, 2010 to determine approach for revisions

TIR for Performance of Fittings, CSA America HGV 4.10

- Currently published as a temporary interim requirement
- Attempting to satisfy numerical requirements for membership necessary for HGV 4.10 TAG
- Next step is to process document through ANSI as an American National Standard

7. IEC TC 105 Committee Draft for IEC 62282-3-1 Ed. 2

- Committee Draft (611Kb PDF)
- Comment Form (29Kb MS Word .doc)

8. Codes and Standards Organizations – All

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

8.1 ANSI-Accredited U.S. TAG for ISO/TC 197, Hydrogen technologies

Ballots closed – waiting results

N472, proposal to revise ISO/TR 15916:2004, Basic considerations for the safety of hydrogen systems

The U.S. TAG voted to approve the update as a TR. The ISO ballot terminated on July 19; results of the vote have not been circulated.

IEA Hydrogen Implementing Agreement Task on Hydrogen Safety will try to be more involved in the future.

Systematic review of ISO 16110-1:2007, Hydrogen generators using fuel processing technologies — Part 1: Safety

The U.S. TAG voted to confirm. The ISO ballot terminated on June 15; results of the vote have not been circulated.

Upcoming meetings

ISO/TC 197/WG 14, Hydrogen fuel — Product specification — Proton exchange membrane (PEM) fuel cell applications for stationary appliances
September 13-14 in Vancouver, British Columbia

ISO/TC 197/WG 15, Gaseous hydrogen—- Cylinders and tubes for stationary storage – POSTPONED
September 15-16

ISO/TC 197/WG 8, Hydrogen generators using water electrolysis process, and WG 11, Gaseous hydrogen — Fuelling stations
September 21-22 in Tokyo

IEA Hydrogen Implementing Agreement Task on Hydrogen Safety will try to be more involved in the future.

8.2 ASME Update
2010 B&PV Code has been updated and published (Section X Appendix 8) to allow up to 15,000 psi composite tanks for stationary hydrogen storage using non-load-sharing liners. There is an action item to add transportation (over the road) and marine tanks. There is also a new item in place to allow load-sharing liners.

8.3 SAE Update
September 14, 15, 16 meetings.

Aerospace fuel cell working group is working on fuel cells too.

8.4 Sandia Workshops – November 3, 4, 5 at Sandia, Livermore
Livermore Valley Open Campus
Hydrogen Compatible Materials
Coordinate timing and priorities for research
Near term storage systems and gaps – R&D Needed
Issues related to needs and barriers for qualifications and certifications for hydrogen components and systems – Possible DOE involvement and R&D

8.5 NIST
Juana Williams provided an update on commercial measurement. On October 5, 2010, NIST Weights and Measures Division will give a technical presentation on "Commercial Hydrogen Measurement" to regulatory officials and industry representatives attending the 65th Annual Meeting of the Southern Weights and Measures Association (SWMA) in Columbia, SC. The association includes 16 southeastern states, District of Columbia, and the Virgin Islands. The seminar will cover hydrogen facts, weights and measures roles, and the recently adopted method of sale regulation and tentative equipment code. The SWMA will also tour the South Carolina Research Authority's Richland Street hydrogen station where they will observe the dispenser’s operation, fuel storage, and refueling of a fuel cell vehicle.

8.6 NFPA update - Marty Gresho
NFPA-2 has passed the ROP stage and will be published. October 22, 2010 is the time limit for NITMAM
NFPA 55 is entering cycle. Proposals due November 23, 2010
NFPA 52, May 23, 2011
NFPA 853 is published and the next open cycle is to support 2013 revision.

8.7 ASTM Update
Jackie Button provided an ASTM update.
December 6-8 ASTM meetings are being planned.

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	CO2 (0.5 ppm) nitrogen (5 ppm), argon (1 ppm), oxygen (2 ppm), and water (1 ppm)	Submitted to main (Sept 17)
5847	Standard Practice for Sampling of High Pressure Hydrogen and Related Fuel Cell Feed Gases	Gaseous sampling	Negatives addressed – reballoting (Sept 20)
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	Standard Test Method	Ammonia,CO2,	Submitted

(27163)	for Determination of Ammonia and Trace Water in Hydrogen and Other Gaseous Fuels by Infrared Spectroscopy	CO, formaldehyde, formic acid, and water (defined by EPA 40 CFR part 136 Appendix A "meet detection limits of SAE TIR J2719")	to main (Sept 17)
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	Submitted to main (Sept 17)
21611	Determination of Total Hydrocarbons (C1 basis) in Hydrogen by Total Hydrocarbon Analyzer (THC)	Total hydrocarbons (0.1 ppm)	Passed sub ballot – addressing 3 negatives (Sept 20)
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)	Awaiting main committee ballot (Sept 20)
24073	Standard Test Method for Determination of Trace Hydrogen Sulfide, Carbonyl Sulfide, Methyl Mercaptan, and Carbon Disulfide in Hydrogen Fuel by Gas Chromatography and Sulfur Chemiluminescence Detection	Total sulfur (0.02 ppb)	Submitted to main (Sept 17)
None	Standard Practice for the Determination of Carbon Monoxide, Formaldehyde,	CO, formaldehyde, ammonia (unknown)	N/A

	Ammonia and Other Trace Substances in Hydrogen Fuel Streams by Laser Based Spectrometric Methods		
None	Field Sampling Apparatus	All	N/A
None	Vehicle Fueling Interface Surface Particulate Matter	Particulates	N/A

8.8 IEC TC 105 Update - Kelvin Hecht

WG#3 (IEC 62282-3-1, Stationary Fuel Cells-Safety)
Comments on CD for 2nd edition by September 17th.

WG#7 (IEC 62282-5-1 Ed.2, Portable Fuel Cells –Safety)
Vote by February 4, 2011

WG#9 (IEC 62282-6-200, Micro Fuel Cells –Performance)
Comments on CD for 2nd edition by October 15th.

A new activity to address forklifts will be proposed at the October Plenary meeting.
Canada, Germany, Japan and Korea will meet in Frankfurt Sept. 14 to plan activity.

Plenary & Working Group meetings; October 11-15, Seattle.

For more information, see www.fuelcellstandards.com

9. Open Discussion and Other Issues

Shall we have an in Person Meeting at Fuel Cell Seminar?
October 18 – 22 in San Antonio

Robert Wichert will poll the group

10. Next Meeting

October 6, 2010