

# **MINUTES OF THE OCTOBER 2010 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE**

**MEETING DATE: October 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 September 2010 Teleconference Meeting**

Approved as written

### **3. DOE/HQ Update – Antonio Ruiz**

Antonio provided an update. FY 2011 started on October 1, 2010. Re-evaluation of priorities is in progress. Two meetings were held in China and one meeting in Japan.

Meeting in China – Type 4 tanks have been banned in China for many years. Several presentations were made by the US and Europe. US will try to work more with China in the future.

Funding update -- \$9M SCS, \$137M House, \$174M Senate

2011 - \$9M for SCS

Continuing resolution – working with the lowest of the marks (\$137M) and \$9M for SCS.

The ISO/TC 197 WG 8 and WG 11 meeting were held in Japan – The WG 11 meeting was intense. There were discussions regarding US work and international adoption of the ISO requirements when the US does not agree with them.

There are several upcoming workshops planned –

- Insurability
- Sensor targets
- CNG/blends/tanks follow-on from discussions in China
- Certification
- Hydrogen Compatibility

IPHE Working Group on Codes and Standards – Goal is harmonization at the government level.

Brussels – IPHE Working Group on Codes and Standards is expected in November.

### **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.fuelcellstandards.com/calendar_new.html)

- <http://www.hydrogenandfuelcellsafety.info>

Karen noted that the ISO/TC 197 WG 15 meeting that had been postponed from September was now scheduled for December 7-8 in Paris.

## 5. NHFCCSCC Mission Statement and Meeting Format

Due to time constraints, this topic was deferred until next month.

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

#### *HFC4 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 data-based hydrogen and fuel cell safety criteria into the existing and proposed national and international codes and/or standards promulgated by:

- American Petroleum Institute (API)
- American Society of Mechanical Engineers (ASME)
- ASTM International
- Compressed Gas Association (CGA)
- CSA America / CSA International
- Institute of Electrical and Electronics Engineers, Inc. (IEEE)
- International Code Council (ICC)
- International Electrotechnical Commission (IEC)
- International Organization for Standardization (ISO)
- National Fire Protection Association (NFPA)
- National Institute of Standards and Technology (NIST)
- Society of Automotive Engineers (SAE)
- Underwriters Laboratories
- Other applicable organizations through active collaboration with ANSI
- United States Department of Transportation
- California Division of Measurement Standards (Department of Agriculture)

HFC4 will promote development of codes, standards and regulations to facilitate technology deployment and 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](http://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 at [www.hydrogenandfuelcellsafety.info](http://www.hydrogenandfuelcellsafety.info) and [www.fuelcellstandards.com](http://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](http://www.fuelcellstandards.com) and [www.hydrogenandfuelcellsafety.info](http://www.hydrogenandfuelcellsafety.info) to provide up-to-date information on hydrogen and fuel cell codes and standards activities worldwide. [www.fuelcellstandards.com](http://www.fuelcellstandards.com) will maintain the matrix of ongoing and completed codes, standards and regulations, with status and contact information. [www.hydrogenandfuelcellsafety.info](http://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.

**Fuel Cell Forklifts - Aaron Harris**

Meeting next Tuesday at 11:00 AM

Work continues on various documents:

- HPIT-1 Hydrogen Powered Industrial Trucks. All components, fittings, and tanks: Work continues. Sandia testing is delayed by compressor failures.
- HPIT-2 Indoor fuel dispensers for fork lift trucks: Work may have started.
- UL 2267 – Fork Lift Listing Standard: The update is released and work continues. Comments are being considered.
- SAE 2919 – Fork Lift On Board Fuel Sub-System (based on SAE 2579) – Mike Steele: Balloting as a TIR.
- UL 583 Electric Fork Lifts: no update.
- NFPA 505 Hazard Classification for Fork Lifts: No update. Release is planned for 2011.
- RAISE NFPA 52 ON THE REG. MATRIX: ICC – Fire Code for indoor refueling systems (Chapter 22)

#### **Tank Testing - SNL**

Nothing to report.

#### **Workshops at Sandia - SNL**

There will be a series of workshops November 2,3,4 at Sandia Livermore:

- November 2 – CSA Hydrogen TAG: members only to identify scope and schedule. PM – CSA Materials work
- November 3 – Hydrogen Compatible Materials Workshop – Harmonize hydrogen compatibility studies internationally. US Vehicle OEMs. Hydrogen Providers. Roadmapping of international R&D for hydrogen compatible materials.

- November 4 – Component and system qualification. Component listing and qualification. What are the key issues involved in certification and listing of components and systems? What are the priorities? Vehicles and fuel cell systems. R&D, materials and other issues where DOE can assist. How to streamline listing and certification.

## **6. Codes & Standards Organizations - All**

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

### **ISO/TC 197 - Glenn Scheffler**

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.
- 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.

Chair advisory group on hydrogen storage

- Per N480, the chairman of ISO/TC 197 is establishing an advisory group on hydrogen storage. This advisory group will help guide the work of all work items related to hydrogen storage.
- The U.S. TAG has provided nominees prior to 30 August 2010.
- We are waiting for an announcement from the secretariat as size was to be limited.

WG 11 meetings were held in Tokyo in September

- ISO/DIS 20100, Gaseous hydrogen – Fuelling stations, will be temporarily de-scoped for the upcoming ballot in February or March of 2011. Indoor fuelling and operations & maintenance will not be included.
- The U.S. has agreed to one more attempt to harmonize separation distances internationally in TG1.
  1. Comparisons of calculation of separation distances using NFPA and TG1 methodologies may reveal alignment or differences at a functional level.
  2. Sandia will be supporting this effort.

WG 8 meeting was held in Tokyo the day prior to the WG 11 meeting. No U.S. participation.

**NFPA - Marty Gresho, Robert Wichert**

The Pre-ROP meeting for NFPA 52 was held in September. There was some discussion of removing Hydrogen from NFPA 52 and deferring to NFPA 2. NFPA 52 will be drafting a scope change letter for consideration by the Committees by the end of October to defer to NFPA 2 for hydrogen fueling. An answer from the Committees is expected in December. The Standards Council makes the final decision following the Technical Committee recommendation.

Proposals are due May 23, 2011.

NFPA 2 – ROC Completed. October 22 is the Motion deadline. Publication could occur in December.

NFPA 55 Proposals are due on November 23

NFPA 30A – Comments are due by November 23

#### **ASTM D03.14 Hydrogen and Fuel Cells Update- Bill Collins**

Work is progressing on ASME B31.12, 2nd Edition. NFPA 850 has issued a TIA on gas blowing of lines. B31.1 will follow up. The update in Appendix A for the ASTM work was provided for the minutes.

#### **SAE - Mike Steele**

September meetings were productive. Nov 9,10,11 are the next meetings. SAE J2919 is out for vote. SAE J2719 on hydrogen quality is progressing and waiting for the ASTM test methods.

#### **NIST - Doug Horne**

Doug Horne provided an update on a steering committee on research on Type 4 cylinders. Type 4 Tank Failure Investigation Steering Committee NASA, DOT, DOE, Industry, NIST (Boulder) to update NGV 2 for Type 4 Cylinders. The focus is to look at the failure modes and how to detect damage and incipient failures.

### **7. Open Discussion & Other Issues**

Karen Hall provided an update on the Next Energy C&S Conference held on September 21. There were several presentations that related to home hydrogen refueling. As a result, she raised this during the NFPA pre-ROP meeting to begin the work to identify restrictions or gaps in the codes. The proceedings of this conference will be posted in the Hydrogen and Fuel Cell Safety Report later this month at [www.hydrogenandfuelcellsafety.info](http://www.hydrogenandfuelcellsafety.info). With a growing interest in home hydrogen refueling, it may be of interest to this group to review them.

Robert Wichert reported that based on results of a poll regarding participants planning to attend the Fuel Cell Seminar, there will be no in-Person Meeting at Fuel Cell Seminar.

### **10. Next Meeting**

The next meeting will be Monday November 1, instead of the usual Wednesday, due to schedule conflicts with the ASME Project Team on hydrogen tanks.