

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

**Wednesday, May 6, 2015  
TIME: 3:00 – 4:30 pm (Eastern Daylight Time)**

**Minutes**

**Attendees**

**Connor Dolan  
Greg Chirdon  
Jay Keller  
Jesse Schneider  
Julie Weis  
Karen Hall  
Kelvin Hecht  
Kevin Schnepf**

**Marcia Poxson  
Martin Gresho  
Mike Steele  
Nick Barilo  
Norman Newhouse  
Spencer Quong  
Susan Bershad  
Will James**

**Larry Moulthrop  
Bill Collins  
Bob Boyd  
Chris San Marchi  
John Grimes  
Juana Williams  
Steven Yip  
Sondra Ullman**

**I. Welcome and Housekeeping Items**

- The Committee reviewed FCHEA's anti-trust guidelines - Available on FCHEA's members only website.
- Reviewed the meeting agenda.
- Approve April draft minutes.

**II. DOE/HQ Update**

**Will James**

DOE Annual Merit Review – Crystal City, VA June 8 – 12.

<http://www.annualmeritreview.energy.gov/>

Thursday June 11<sup>th</sup> – Special session highlighting the infrastructure, cross-cutting programs (H2FIRST, Safety Codes and Standards, Systems Analysis, and Delivery).

A few weeks ago at HTAC meeting the Under-Secretary announced two reports and two models in support of infrastructure deployment. HRSAM (hydrogen refueling station analysis model), complements HDSAM, which focused more on longer term station deployment. H2FAST Tool – Hydrogen financial analysis tool. Through H2FIRST, two reports were published, reference station design report and hydrogen contamination detection report. More information is available here -

[http://h2usa.org/sites/default/files/H2USA-Fueling-Station-Reports-April-2015\\_0.pdf](http://h2usa.org/sites/default/files/H2USA-Fueling-Station-Reports-April-2015_0.pdf).

June of last year had a contamination detection workshop, that report came live in early April / late March. A link will be provided by Will James if available.

Senate Budget – No new updates.

### III. C&S Events and Fuel Cell Safety Information

[http://www.fuelcellstandards.com/calendar\\_new.html](http://www.fuelcellstandards.com/calendar_new.html)

**Kelvin Hecht**

<http://www.hydrogenandfuelcellsafety.info/meetings.asp>

**Karen Hall**

Update Meeting timing – ISO WG 24,19, and 20 – Meeting June 15<sup>th</sup> – 19<sup>th</sup> – Paris, France

Add ICHS Steering Committee Meeting – Week of June 25<sup>th</sup> – Pisa, Italy

**Request:** technical resource updates for the Hydrogen and Fuel Cell Safety website. Any committee members who have materials they would like hosted on the website can send them to Karen Hall ([khall@fchea.org](mailto:khall@fchea.org)) or Connor Dolan ([cdolan@fchea.org](mailto:cdolan@fchea.org)).

### IV. Global Technical Regulations

**Nha Nguyen**

No report at this time.

### V. Codes and Standards Organization Updates

#### IEC TC 105

**Kelvin Hecht**

WG#3 (IEC 62282-3-100 – *Stationary Fuel Cells – Safety*)

Will meet in September, in conjunction with TC105 Plenary, to start on next edition.

Agenda will include:

US – Editorial & clarifications

CSA FC1

Bloom Energy

Japan – New standard for small power systems ( < 10 kW )

Germany – Valves certified for tightness do not have to be considered as potential leak sites

WG#4 (IEC 62282-3-200 Ed.2 – *Stationary Fuel Cells – Performance*)

Approved for FDIS

WG#9 (IEC 62282-6-200 Ed.3 – *Micro Fuel Cells – Performance*)

3<sup>rd</sup> edition posted for vote and comments. Input to USTAG by June 1<sup>st</sup>.

WG#12 (IEC 62282-3-400 – *Small Fuel Cells with Combined Heat & Power*)

Will meet in Vancouver May 20-22.

#### ISO TC 197

**Jill Thompson**

Jesse Schneider - WG 24 – A weeklong meeting a few weeks ago in Munich, Germany. The draft looks like there is a few things to be done. May 11<sup>th</sup> will be an update for Annex B discussion. Clean Energy Partnership given WG 24 their fueling validation procedure. That has been integrated into Annex B. In addition, FCCJ (japan) gave their guideline for hydrogen quality control for Annex C. The fueling validation device from CEP was viewed in person, the summary will be given to the HySTEP device folks tomorrow.

Kick off of the three day risk assessment from Shell. Numerous threats were discussed. The team went through the risk assessment - follow-up meeting to be held June 15<sup>th</sup> in Paris France. Main items on risk assessment are rating of temperature and pressure on station, and the need to confirm the PLC is doing the right fueling procedure, more details will be given after June.

Request from Juana regarding CEP device – the scale that is on the HSTA can weigh three 6 kilogram tanks and scale specification is +/- 5 grams from tare weight to 1,500 kilograms. More details will be given out on the call tomorrow with the HySTEP device.

Questions can be sent to Jesse Schneider.

Karen Hall – USTAG of TC 197, meeting a couple of days ago on two of the drafts out for comment, valves and dispensers. With regards to valves, did not finish – a couple of technical comments. From the comments understanding that need more time to discuss process or approving / certifying high-pressure valves. Follow-on call for this Friday.

Three WGs facilitated by Karen (compressors, hoses, fittings) meeting in June. June 8 two half-day meetings, June 12<sup>th</sup> meeting for five hours on hoses. With this international work, always value participation from manufacturers and other experts.

## **NFPA 2**

**Martin Gresho / Susan Bershad**

NFPA 2 is a consent document, as is NFPA 55, and will be issued in May 26. They will carry a 2016 date.

Both documents are on a three-year revision cycle, which means that public comments are due in June 2016. Not too early to start thinking about potential comments now.

## **ICC**

**Bruce Johnson**

Marty Gresho – The International Fire Code (IFC) is what the ICC calls a Group B document. Public input is due January 11, 2016. Some of the other docs (fuel gas code) deadlines have already passed.

## **CSA**

**Julie Weis**

The CSA presentation is available online at [www.fchea.org/s/CSA-Group-Update-2015-05-06.pdf](http://www.fchea.org/s/CSA-Group-Update-2015-05-06.pdf).

## **SAE**

**Mike Steele / Tim McGuire**

*Recruitment letter: SAE Recommended Practice for Hydrogen Fuel Cell Vehicle Crash Testing Safety Guidelines*

Automotive Industry colleagues,

SAE International is actively recruiting technical committee members to participate in the development of an industry recommended practice for Hydrogen Fuel Cell Vehicle Crash Testing Safety Guidelines. The SAE Impact and Rollover Test Procedure Standards Committee's objective is to

establish a SAE Recommended practice for laboratory procedures to mitigate the risks associated with conducting Hydrogen Fuel Cell Vehicle Crash Tests.

This SAE Recommended Practice will provide an overview of the special risks associated with the destructive testing of Hydrogen Fuel Cell vehicles and countermeasures to help mitigate the risks to laboratory personnel safety, facility and equipment used in the test sequence.

The SAE Impact and Rollover Test Procedure Committee has recently completed work on a similar industry recommended practice for EVs, HEVs and PHEVs. This document (SAE J3040) is in the final review phase and will be balloted and published in the next few months.

Crashworthiness testing laboratories will be engaged in testing hydrogen fuel cell vehicles for product development, certification and performance ratings in the near term as two vehicle OEMs have announced plans to introduce Hydrogen Fuel Cell vehicles into the marketplace in 2016. SAE International's goal is to bring the appropriate industry experts together to collaborate in the development of an industry recommended practice to support safe crashworthiness testing of Hydrogen Fuel Cell vehicles.

Please provide a response to Nikki Ameredes ([nameredes@sae.org](mailto:nameredes@sae.org)) if you are interested in participating in this effort.

The next meeting scheduled for the SAE Impact and Rollover Test Procedure Committee is on May 18, 2015 from 1:00PM to 2:00PM EDT. The meeting format is a WebEx / conference call to allow remote participation. Nikki can provide the WebEx / conference information upon request.

Please cascade this message to the appropriate persons within your organization.

Sincerely,  
Keith Wilson  
Project Manager, Technical Programs  
Global Ground Vehicle Standards

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**Mike Steele - June 10th and 11th – meetings to be held**

J2600 finishing up affirmation ballot today. Hopefully will go through.

Safety agenda is out, interface still working on it.

More information is available on the SAE website.

Spencer Quong – 2990-1 first responder document, submitted it for review. Received 28 pages of comments. Next meeting on May 20<sup>th</sup>. Hopefully will ballot after the June meeting, will see if we get any comments internationally.

## **ASTM**

**Tommy Rockward**

The GC mass spec ILS is complete. Received some data from JP, ASTM has received it. Conference call set-up to assimilate the data. ILS needs to start, looking for testers. Upcoming ASTM meeting – Florian to present.

New work item, determination of weight from hydrogen refueling stations. Came back with three negatives and two comments from ballot. June 21 – 25 will have to find resolutions with those negatives before ILS.

New agenda items – Jesse Schneider to update on WG 24 activities.

Mike Steele – J2719 – hydrogen quality specification, some items still outstanding (23815).

## **ASME**

**John Grimes**

Bill Collins – Piping code week in September in Chicago. Info sent to Kelvin.

B3112 current edition published about one month ago.

Bob Boyd – 3112 is hydrogen specific only goes to 5000 psi.

Bill - It goes up to ~6000 psi.

Bob – Any reason that ASME would not support up to 15000 psi - standard for normal hydrogen fueling.

Bill – Debating whether to go that high or go to Chapter 9. The question is manpower and need to get it done.

## **VI. Discussion Topics**

### **Facilitating Deployment**

**Carl Rivkin**

One of the projects working on works with Orange County Fire Authority – where several new hydrogen stations being built. Looking for feedback from the Orange County Fire Authority on their use of NFPA 2. One of the areas where NFPA 2 will be used a lot for the first time, good opportunity to hear how it is working in the field and how the requirements are being used by the stations, and whether there are any issues of enforcement, etc. Will be helpful for potential code revisions to NFPA 2.

This effort will be part of the FCHEA activities to work on code development.

## **H<sub>2</sub>USA Activities**

**Karen Hall**

There was a workshop held on April 30<sup>th</sup> for H<sub>2</sub>USA participants to learn about modeling tools (internal to H<sub>2</sub>USA only).

The Task Group for RCS met in April, looking at opportunities to submit code change proposals at the state/regional level. Looking at timing / availability. Next step includes a plan on coordination. Next meeting will be on May 15.

Jay Keller - FCHEA activity to examine the current code world, examining questions on current and future needs. The H<sub>2</sub>USA activities and FCHEA activities are working synergistically without duplication.

## **H2FIRST**

**NREL/SNL**

Chris San Marchi – initial reports for contaminant detector and reference station design. The focus now is on the HySTEP device.

Bob Boyd – Hope to factor testing / approval testing in June of the HySTEP device. It will go to NREL in Golden for extensive testing.

## **Regulatory Matrix Review and Comment**

**Karen Hall**

The latest version of the Regulatory Affairs Matrix is available online at <http://www.fchea.org/s/FCHEA-Regulatory-Matrix-2015-3-31-Clean.pdf>.

Comments can be submitted to Karen Hall at [khall@fchea.org](mailto:khall@fchea.org).

## **VII. Permitting and Installation of Hydrogen Fueling Stations**

### **Ca Station Implementation**

**Jennifer Hamilton**

No report at this time.

### **Ca DMS Fuel Quality / Metrology**

**Kevin Schnepf**

Test of the station in Newport Beach. Issued a temporary use permit for 700 bar. Some performance issues on the 350 bar dispenser. Scheduled for end of June for permanence testing for 700 bar and new testing of 350 bar.

Second installation of a type approved dispenser scheduled in June. New initial on another station that had been re-engineered in June as well.

More to report expected for July.

### **SAE J2601 Compliance**

**Jesse Schneider**

Spencer Quong - HGV 4.3 – will be the document used for certification of stations, working on it. About 75 – 90% in writing it. A lot of good work being done, test procedures written. Hopefully to have document out for review next month or so. Target is complete document by the end of the year.

**Legal Metrology Standards Hydrogen Fuel  
Quality and Measurement**

**Juana Williams**

No report at this time.

**VIII. Open Discussion & Other Issues**

Next meeting will be held on Wednesday, June 3<sup>rd</sup> at 3:00 PM Eastern.