

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

**Wednesday, March 4, 2014
TIME: 3:00 – 4:30 pm (Eastern Daylight Time)**

Minutes

Attendees

**Bob Boyd
Brent Hartman
Carl Rivkin
Connor Dolan
Ernst Baumgartner
Jay Keller**

**Jesse Schneider
John Grimes
Juana Williams
Julie Weis
Karen Hall
Kelvin Hecht**

**Marcia Poxson
Martin Gresho
Mike Steele
Nha Nguyen
Sondra Ullman
Steven Yip**

I. Welcome and Housekeeping Items

- Review anti-trust guidelines - Available on FCHEA's members only website.
- Review the meeting agenda.
- Approve February draft minutes.

II. DOE/HQ Update

Will James

The Fuel Cell Technologies Office will present a live webinar entitled "2nd International Hydrogen Infrastructure Challenges Webinar" on Tuesday, March 10, from 8 to 9 a.m. Eastern Daylight Time. This webinar will summarize the 2nd international information exchange on the hydrogen refueling infrastructure challenges and potential solutions to support the successful global commercialization of hydrogen fuel cell electric vehicles.

The information exchange took place in May 2014 at Toyota's Torrance, California, facility as a follow up to the previous June 2013 workshop in Berlin, Germany. Participants included topical experts from Germany, Japan, the United States, Scandinavia, and the European Commission. Key focus areas of the webinar included the station requirements necessary to meet the latest SAE J2601 protocol and the development of alternative fueling protocols, maintaining and measuring purity to the SAE J2619 fuel quality standard, and the availability and accuracy of meters for hydrogen dispensing for 700 bar onboard fueling. Also included was an overview of the current status of key hardware for 700 bar refueling. Register for this webinar.

To register, please click here: <http://energy.gov/eere/fuelcells/webinars>

National Hydrogen and Fuel Cell First Responder webinar – announcement coming soon.

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

III. C&S Events and Fuel Cell Safety Information

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

Kelvin Hecht

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

Karen Hall

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) or Connor Dolan (cdolan@fchea.org).

IV. Global Technical Regulations

Nha Nguyen

Some activity on the GTR on fuel cell vehicles at NHTSA. The GTR Phase 1 was established June 2013. Under the agreement, contracting parties are obligated to start the process. We are assessing the test procedures. Based on type approval in Europe, so it is not as objective and clear as we would like in the US. Went through the GTR and identified areas for clarification.

One was pneumatic and hydraulic tanks, not clear what we need to do in the GTR. Need more detailed test procedures to incorporate into compliance certification in the US. DOT started a contract through a DOE program to have Powertech run a series of tests on type 4 tanks. They are doing that now. Kickoff meeting three weeks ago. Purchased the tanks and running the tests for us. Including the first and second test on hydraulic and pneumatic. Expect completion by this summer. NPRM hope to be published by end of 2015 or early 2016. Europe has already adopted the GTR into their regulation, as well as Korea.

Phase 2 of the GTR, co-sponsor US, Japan, and Germany decided to hold off until complete US rulemaking. For Phase 2 will look at material compatibility and tank stress rupture. Also try to include other vehicle classes, outside of passenger vehicle look at buses and heavy duty vehicles.

Germany also is looking at cryogenic storage systems in the long-term.

Carl Rivkin – Phase 2 will not start until rulemaking is complete. Does this refer to the Final rule / regulation as published in the Federal Register?

Nha – Probably not final rule. Can start dialogue will preparing NPRM. By then will have done a lot of the work already. Once we are close to the NPRM or publish it, will be ready for Phase 2. After publish NPRM, will have comment period, will address the comments, then do a final rule. Could take as long as a year.

Jesse Schneider – Is there a willingness to work with SAE with regards to materials compatibility before get started?

Nha – Most definitely. Been very helpful in Phase 1, welcome expertise and knowledge from SAE committee. SAE, ISO, and any other standards experts will be invited to participate in the working group.

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.

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

WG#4 (IEC 62282-3-201 Ed.2 – *Small Stationary Fuel Cells - Performance*)
CD posted for comments
USTAG accepted draft with no comments. (almost all changes for 2nd edition were editorial.)

WG#6 (IEC 62282-4-102 – *Forklifts – Performance*)
Approved for 2nd Committee Draft
The 2nd Committee Draft will be posted in March.
All 7 USTAG comments to the 1st Committee Draft were accepted.

WG#8 (IEC 62282-6-101 – *Micro Fuel Cells – Safety-General*)
Harry Jones, convener, will complete CDV and two Part 2 CD's in the next two months.
Most US interests have left Micro Fuel Cell applications.

WG#9 (IEC 62282-6-200 Ed.2 – *Micro Fuel Cells – Performance*)
Approved for a 2nd Committee Draft

WG#10 (IEC/TS 62282-6-400- *Micro Fuel Cells – Interchangeability of Power & Data*)
Approved for FDIS

WG#11 (IEC 62282-7-1 Ed.2 – *Single Cell Test Methods for PEFC*)
Committee Draft due in February

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

WG 5 meeting to be held in conjunction with SAE meetings next week.

Face to face meetings for WG 21, 22, and 23 will take place Monday June 8 and Friday June 12 in conjunction with the DOE AMR.

ISO TC 197 – WG 24 Update

Jesse Schneider

Presentation provided by Jesse Schneider available online at www.fchea.org/s/TC-197-ISO-19880-1.pdf.

Jay Keller – WG 24 is assuming fuel quality control. The effort is focused on how the station can provide assurance that fuel quality is consistent with definitions. With that said, there is a newer activity within ISO to restart the WGs responsible for fuel quality specifications, in ISO and within SAE. This will be launched in the next 6 months or so. A bit of concern is

the Europeans are concerned will not be fast enough on the tolerances, launching their own activity. Working to ensure the two efforts do not deviate and split activity.

The providers are not convinced the thresholds need to be so tight. On these two efforts the tolerances are the two tables.

NFPA 2

Martin Gresho / Susan Bershad

Friday is the big day for NFPA 2 and NFPA 55. Closing date for filing a notice against the document. Do not have any aware of. If none received then NFPA 2 and NFPA55 will be on consensus document list without any further meetings. All of the work will be published and available targeted by mid-Summer. If a motion is received then the document will have to be defended at the annual meeting in June in Chicago.

If get through this NITNAM process will have both documents available relatively soon.

NFPA 853

Karen Hall

Recently published at the end of last year. Not open for anything new.

ICC

Bruce Johnson

No report at this time.

CSA

Julie Weis

Presentation is available online at www.fchea.org/s/CSA-Group-Update-2015-03-03.pdf.

SAE

Mike Steele / Tim McGuire

Meetings next week. Monday – Wednesday. Safety WG is on Monday. Interface on Tuesday. Follow-over meetings on Wednesday, as well as Plenary session.

June meetings to be held on June 10-11.

ASTM

Tommy Rockward

No report at this time.

ASME

John Grimes

No report at this time.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

Working with the Orange County Fire Authority on a training video for hydrogen fueling stations. Working with first element, developing 19 stations in California. Feedback received from FirstElement on permitting activities, generally going well. Able to find locations for the station, had several permits through review process. Some issues on the

hydrogen storage system in regards to the setback distance in NFPA 2, found ways to overcome so moving forward.

Beginning filming in March / April timeframe. Purpose to help those working through the permit application, as well as those approving the systems. Result is to hopefully improve the speed of permitting. Reviewer should have a better idea of what the standards are, how the technology works, etc.

While filming in locations in California, the goal is to have a video that will help applicants throughout the country.

The video will be distributed on the DOE website.

H₂USA Activities

Karen Hall

H2USA's working group activities are all moving forward. The Hydrogen Fueling Station Working Group is dealing with issues on listing / approval of components for fueling stations.

Joint Regulations Codes and Standards task team group – issue with differences in setbacks in OSHA and NFPA 2. After some digging, determined that when the issue becomes a high enough priority for industry, it might make sense to work with those in NFPA to move NFPA 2 through the OSHA regulation. Martin Gresho offered to assist in this regard.

H2FIRST

NREL/SNL

Carl Rivkin - Chris Ainscough would be the appropriate NREL staff to provide the update.

Action Item: Chris will be contacted to provide a report on the next call.

Bob Boyd – Hydrogen Dispenser Testing Apparatus – Completed first level FMEA – Sandia is presenting the general overall pictures of the progress (progress flow diagram, trailer mounting issues, package dimensions, etc.) on the Hydrogen Safety Panel today at the California Fuel Cell Partnership. Final design review to be held in two weeks. Final order to build will follow. Close and looks good.

Regulatory Matrix Review and Comment

Karen Hall

The latest version of the Regulatory Affairs Matrix is available online at <http://www.fccea.org/s/FCHEA-Regulatory-Matrix-Dec-31-2014-clean.pdf>.

Staff is currently compiling the next quarterly revision, based on input from this meeting and others. A new draft will be made available with the agenda for the April meeting.

ACTION ITEM: Karen to prepare next draft Regulatory Matrix before the end of March so that Connor can distribute it for review in advance of the April meeting.

Comments can be submitted to Karen Hall at khall@fccea.org.

VII. Permitting and Installation of Hydrogen Fueling Stations

Ca Station Implementation

Jennifer Hamilton

Jennifer is unable to attend today due to the Safety Panel Meeting.

Ca DMS Fuel Quality / Metrology

Kevin Schnepf

No update at this time.

SAE J2601 Compliance

Jesse Schneider

Germany's CEP Hydrogen Station Testing Apparatus (HSTA) device has been built to validate J2601 standard. A new function was added. A weigh scale has been added to address mass transferred for metering.

Jay Keller – Understand that the device is not qualified to weigh the flow rate. Just the end state to determine mass delivered.

Jesse Schneider – Will confirm with CEP the scale specification.

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

Juana Williams

Juana Williams requested more information on the HSTA device scale discussed by Jesse Schneider, specifically, the capacity, the weight capacity of the scale, and the smallest division size for the resolution of the scale indications.

VIII. Open Discussion & Other Issues

The next meeting will be held on April 1, 2015 at 3:00 PM Eastern.