



Fuel Cell &
Hydrogen Energy
Association

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

**Wednesday, May 4, 2016
TIME: 3:00 – 4:30 pm (Eastern Standard Time)**

Minutes

Attendees

**Bob Boyd
Chris LaFleur
Connor Dolan
Eric Nelson
Jennifer Hamilton
Juana Williams**

**Karen Quackenbush
Kelvin Hecht
Laura Hill
Marcia Poxson
Mike Steele
Norm Newhouse**

**Steven Yip
Tommy Rockward
Will James
Bill Collins
Herie Soto
Sara Marxen**

I. Welcome and Housekeeping Items

- Review FCHEA's anti-trust guidelines - Available on FCHEA's members only website and a copy can be provided to you on request.
- Review the meeting agenda.
- Approve the April draft meeting minutes.

II. DOE/HQ Update

Will James

Annual Merit Review is one month away. Will be held on June 6 – 10th at the D.C. Marriott Wardman Park Hotel.

The Safety Codes and Standards session will be held on Tuesday. On Thursday we will have a breakout session, cross-cutting on infrastructure projects (codes and standards, systems analysis, hydrogen delivery, etc.)

Last week we held a public webinar on hydrogen risk assessment model (HyRAM). Good turnout on the webinar. Now available to the public. Being used in both domestic and international codes and standards arena.

4th international infrastructure workshop at the JRC in the Netherlands. Strong industry participation from the U.S. and internationally. May 24th and 25th.

III. C&S Events and Fuel Cell Safety Information

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

Kelvin Hecht

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

Karen Quackenbush

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

Request: Please notify Karen or Connor of any meetings / events to add to the calendar.

IV. Global Technical Regulations

Nha Nguyen

Waiting for meeting to take place at the end of the year.

V. Codes and Standards Organization Updates

IEC TC 105

Kelvin Hecht

No updates at this time.

NFPA 2

Martin Gresho / Susan Bershad

Connor Dolan - Technical committee meeting in August in Northern Virginia. Public comment period ends in June. FCHEA is working with our members and other organizations to collect issues and provide appropriate proposals in response.

Jennifer Hamilton – Working with Susan to organize an NFPA 2 webinar by Norcat. Looking at May 31st. Susan presented at a workshop last August, will likely provide similar information. Looking to advertise that a bit and will be roughly one hour long webinar.

ICC

Bob Davidson

First set of hearings held. All proposals favorably received but one. Some questions raised on the last proposal (relating to repair booths) and at least one other entity has expressed interest in working with him on it.

ISO

Jesse Schneider - ISO TC 197 and 158 met in California on April 18th – 22nd. The WGs on hydrogen quality control WG 28 and station WG 24 and kickoff for the analytical methodologies for TC 158 met with the experts, including the state of California DMS and the analytical folks from around the world. WG 28 for hydrogen quality control found a good compromise between EIGA and automotive industry looks like will work for a standard. TC 158 gained a lot of knowledge from DMS and internationally from industry to create an outline and base documents for analytical methods. WG 24 had a number of workshops to finish topics such as hydrogen sampling. Led by Norway, the US, CA DMS, and others.

WG 24 finished a risk assessment for hydrogen fueling which looks like the stations will be recommended to have SIL2 safety integrity level in order to provide safe fueling. The last workshop was the out of bounds fueling workshop, which looks like will generate a protocol for hydrogen fueling without pre-cooling such as home refueling and stations with lower fueling protocols.

May 12th – there will be a meeting of the out of bounds fueling in order to determine what will be simulated for a protocol to be reviewed in June.

In June, there will be two weeks of ISO TC 197 meetings in Munich, Germany. Mainly to finalize the content of standards for WG 24 and 28. TC 158 and WG 27 will also be meeting.

Will James – Who is leading out of bounds fueling efforts?

Jesse Schneider – Me.

Will James – The TC 158 and WG 27 - I thought WG 27 scope is to combine the ISO -1 through - 3 into a single document. Coupling with 158 leads me to believe that they will re-evaluate the limits on the contaminant. Caution the group that any impression that we are doing that in the early deployment phase is not necessarily the right time. The new generation of vehicles will likely go to new loadings.

Jesse Schneider – The Japanese automakers expressed the same concern WG 27 should not be changed without due process.

CSA

Sara Marxen

Report provided – link is available [here](#).

SAE

Mike Steele / Tim McGuire

June meetings are cancelled. Members of the groups should be watching for potential teleconferences between now and September meetings.

SAE conducted two votes – J2719-1 – hydrogen quality standard – passed as TIR. Substantial comments received, will take some months. No timeline for publications.

J2601 also passed vote. Some questions to be answered. Will do another telecom.

ASTM

Tommy Rockward

Thank you for disseminating spread sheet. Helpful in identifying test sites. Bottle neck is that test sites cannot come up with funding.

New Work Item – CGA does not have expertise for cleaning standard, Dan Bartell wants 03 to take it as a new work item for upcoming meeting. Looking for volunteers for this effort. A number of revisions have been done for the standards, needs resolving still is pertaining to ammonia and alkalines. Working on resolving with JP and Roy. May be in final stages of resolving those.

ASME

John Grimes

No update at this time.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

Jennifer Hamilton - Permitting guide is available on the NREL website.

Will James – Published in March, called “Guide to Permitting Hydrogen Motor Fuel dispensing Facilities.” Will be highlighted more broadly in the near-future along with other reports.

Karen Quackenbush – Will be added to the Safety Website technical resources page.

H₂USA Activities

Karen Quackenbush

Codes and standards activities – H2FIRST folks have been participating with HFSWG and discussing with industry research ideas for next round. Lots of good ideas generated and being developed further now for future project ideas.

Joint Task Team on codes and standards met. Working on potential barriers in states and regions, such as bridges and tunnels issues.

Will James – Started some initial outreach activities in the northeast. Two meetings in New York, one in MA. Initial targets is local authorities having jurisdiction. Had some industry participation as well as DOE representatives. Good turnout, average of 25 folks per session.

Jesse Schneider – Offer to help in outreach to areas such as New York and New Jersey Port Authority.

Other NHFCCSCC participants also offered assistance.

H2FIRST

NREL/SNL

Bob Boyd - HyStep device is out testing stations and gathering data. Working with CAFCP team on this station evaluation program. Still in Southern California. A lot of feedback from Sandia, made presentation to TC 197 WG 24 team, lot of lessons learned from early deployment of the device have gone into the standard. Will be a great learning tool for all of us.

Regulatory Matrix Review and Comment

Karen Quackenbush

A new version came out in early December. Let Karen know if anything on the matrix is missing or outdated, or where it is regarding to priority-level of the activity. Everything is open to discussion. Most changes last quarter were in CSA, SAE, ISO activities that moved forward.

<http://www.fchea.org/s/FCHEA-Regulatory-Matrix-mark-up-March-31-2016.pdf>

Comments can be submitted to Karen Quackenbush at khall@fchea.org.

VII. Permitting and Installation of Hydrogen Fueling Stations

Ca Station Implementation

Jennifer Hamilton

As of Monday, California now has 17 open stations, at least 28 more in process of development. As a reminder, when stations move to open they are in a soft opening status for 30 days. Criteria to met to have an open stations is that they have to have appropriate permits to operate and they need to be fully commissioned and fit. This includes the declaration by the fueling operator that the station meets the fueling protocol and that at least three OEMS meet that protocol. Weights and measures certification must be verified to sell hydrogen by the kilogram. Data also needs to be sent out for tracking data.

Series of workshops, transcripts posted to CEC website.

Safety planning workshop, safety plans must be submitted to the Safety Panel. Nick Barilo gave a webinar yesterday on this topic. Three public meetings held related to the GSL. That presentation will be available on the CEC website as well.

Ca DMS Fuel Quality / Metrology

Kevin Schnepf

Jennifer Hamilton - Working on a letter from the partnership in support of the proposal that CA weights and measures have made to the national W&M group. Meeting coming up in July.

Juana Williams – As far as NIST adopting those standards, the national conference has the proposal before them and has the meeting in July. If adopted, would be included in the handbook 44 for technical requirements for weighing and measuring devices. Would not be NIST.

Fueling Compliance

Sara Marxen / Jesse Schneider

Jesse Schneider – ISO WG 24 put together a workshop with many stakeholders from auto and supplier industry for fueling validation with the purpose to harmonize the methods. The US DOE through Terry Johnson, the clean energy partnership, through Paul Parcel, and the HySUT, presented their lessons learned for validation of hydrogen fueling also to J2601. A finite methodology was developed which will modify the upcoming standard DIS to be voted on in August. Talked about trying to harmonize methods, as 4.3 isn't published yet, no opportunity to discuss. Feeling that ISO and CSA are working very closely in fueling validation. The State of CA may also reference ISO for additional tolerances for fueling validation.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams

No update at this time.

VIII. Open Discussion & Other Issues

Karen Quackenbush – HYSAFE is starting to plan for their next research forum, seeking topics for input. Jay Keller will be taking any US topics back to HYSAFE.

IX. Next Meeting

The next meeting will be held on Wednesday, June 1st at 3:00 PM Eastern.