

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

**Wednesday, March 7, 2018
TIME: 3:00 – 4:00 pm (Eastern Standard Time)**

Minutes

Attendees

**Bob Boyd
Carl Rivkin
Christina Daniels
Connor Dolan
Jay Keller
Jennifer Hamilton
Kelvin Hecht**

**Laura Hill
Mike Steele
Nick Barilo
Norm Newhouse
Rob Early
Scott Lindsay
Yuk Wong**

**Chris LaFluer
Stella Papisavva
Chris Ainscough
Bill Collins
Rob Davidson
Amy Ryan
Morry Markowitz**

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.
- Approve the meeting agenda
- Approve the previous meeting minutes

II. DOE/HQ Update

Laura Hill

Annual Merit Review Registration and Hotel Information will be made available later this week. With the compressed schedule this year, there will be an increased number of posters.

Carl Rivkin – Permitting project to develop standard permits for hydrogen fueling stations to be the basis for any permit of a site. Conducted under the Hydrogen Technical Committee task 2. Drafting what will be the first of several standard permits. The first will cover station that uses both liquid and gaseous storage. For sites that cannot comply with the setback distances, provides expanded safety measures that would reduce the distance needed.

III. C&S Events and Fuel Cell Safety Information

<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).

IV. Global Technical Regulations

Nha Nguyen

Jay Keller – Meeting one month ago in Torrance California. They are addressing the issues that they need to do. Phase 2 is on track and moving forward.

Amy Ryan – Resulting action items from the second informal working group meeting is to set up five task forces to address various technical issues. The first task force will be including Heavy Duty vehicles, the second on how to treat receptacles, the third is improving the reproducibility of the fire test, the fourth is Stress Rupture Test Method, and the last is ISO TC 197 is looking at ISO language that can be brought over to the GTR 13.

V. Codes and Standards Organization Updates

IEC TC 105

Kelvin Hecht

IEC TC 105 is seeking feedback on new areas and applications for consideration of review. A document seeking Committee input will be circulated to the Committee for comment to Kelvin Hecht. Please provide any feedback to Kelvin by April 27th.

ISO/TC 197

Karen Quackenbush/ Glenn Scheffler/Jay Keller

ISO 19880-1 is currently in ballot. Other ISO 19880-x documents are progressing most notably fuel quality and fuel quality control. Will keep updated as more developments occur.

NFPA 2

Carl Rivkin

NFPA 2 went through the first ballot process and is now open for public comments. The public comment closing period is May 9th. There are extensive revisions to the document. The Committee is tentatively scheduled to meet in the first week of August to review comments, will be meeting at NFPA headquarters in Quincy Massachusetts. Will have a 2020 date on it, but will actually be released in May/April 2019.

NFPA 55 is also on the same schedule and open for public comment. The meeting for NFPA 55 will be held in July 24 and 25 in Baltimore, Maryland.

ICC

Spencer Quong

Bob Davidson – sent out an extract document to everyone. Upcoming ICC change hearings in April 15-26 (fire provisions starting on the 23rd). Extracted those that relate to hydrogen motor fueling. A number in their on clarification clean-up and NFPA 2 requirement alignment.

One is temporary use of fuel cell vehicles to power a building under the international building codes. If that is successful it will also be added to the residential code next year. ICC is working on requirements for repair garages are being developed. There are issues with respect to letting the pressure inside type IV tanks to go to zero. Current recommendations are to make sure the handling of the tank is commensurate with the manufacturer procedures. Repairing the vehicle requires a portion of the chassis hull to be removed which some code officials are considering removing the tank and requiring purging, this would add an exception to that.

Another consideration is on outdoor storage language so that obstructions do not get in the way of jurisdictions.

Jay – Concern that you cannot empty type 4 tanks - need to ensure that there is positive pressure in the tank. Current language is to follow OEM procedures

Bob – the language refers to defuel and purge.

CSA

Brent Hartman

Scott Lindsay – FC1 (stationary fuel cell power system) looking to reopen in the coming months. Waiting for 62282-3 document to be published and to harmonize with.

Adopting 62282-2 (fuel cell modules standard) in the US and Canada. The US WG is small, so if you are interested in membership, please let us know.

FC 5 (hydrogen generation standard) still on pause with the ISO 16110-1 standard to resolve.

Making progress on test method for material compatibility for polymers. Meeting monthly.

Nick – Are you working with PNNL on this? Yes, he is the Vice Chair.

SAE

Mike Steele

Another face to face meeting in June in California on the 5th and 6th.

J2579 is on ballot. Anyone on the committee to cast document, please do so as we need to reach quorum.

2601-4 is starting up, will be on display for the June meeting.

CGA

Rob Early

Working now on making update to G-5.5 standard for hydrogen systems. Concerns that some of the equations are too conservative which causes challenges with supply systems and separation distances. Testing with gaseous and liquid hydrogen venting and tracking radiation numbers to have a better number for sizing. Goal is to have better more realistic ways of citing venting for hydrogen to have better separation distances.

Carl – What is the schedule for the revised document?

Cut-off date is September 4th for changes. Likely will be out about one year from now after review and checking.

Are you working with Chris LaFleur group at Sandia National Laboratories? Yes.

Chris LaFleur – This will be the basis for the CRADA coming together between Air Liquide and Sandia.

Carl – The set back distances for the stack is the focus.

ASTM

Jennifer Hamilton

Everything is set to go. Air Gas had some issues with their plant with helium and hydrogen balance in the mixtures. They have fixed that but are a little behind. That was as of March 1st.

Everything else is ready to go. For two methods (ILS) cavity ring down spectrometry and FTIR.

ASME

John Bendo

No update at this time.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

Adding the next edition of NFPA 2 coming out in April/May 2019. Planning to make a handbook for that edition. One of the feedback received from the Hydrogen Safety Panel Discussion when they went out in the field to code officials.

If anyone has ideas or are aware of issues in terms of understanding or applying the code, the handbook would be an appropriate place to handle these issues.

H₂USA Activities

Karen Quackenbush

Jay Keller - H2USA is a little bit in flux. Largely due to the DOE budget issues and maturity of the activities there is a desire to reorganize and reprioritize H2USA direction.

RCS group meets on an as needed basis. Were focused on NFPA 2 and NFPA 55.

H2@Scale

Chris Ainscough – CRADA call opened last September. Received a number of applications and selected 25 applications. Run from station risk analysis to hydrogen integration with the grid, and hydrogen station components. All lumped into four categories. About half of them are executed at this point.

H2@Scale poster session will be Thursday evening at the DOE AMR. This will be a non-reviewed session, but more for education exchange and networking.

Have not decided whether to do another round of the CRADA call.

Regulatory Matrix Review and Comment

Karen Quackenbush

<http://www.hydrogenandfuelcellsafety.info/s/FCHEA-Regulatory-Matrix-markup-Dec-31-2017.pdf>

Permitting and Installation of Hydrogen Fueling Stations

CA Station Implementation

Jennifer Hamilton

Just opened station number 32. Expect number 33 to be open soon.

First responder activity planned for August.

City of San Francisco requested an AHJ sit down information session and looking at dates.

Currently in Boston, did training with Massachusetts Fire on Monday. Had about 70 people in the room and had a Mirai available for drives. Also had a prop which was helpful. Had to cancel a further session due to the coming storm this week.

Friday will be in Connecticut for more training.

CA DMS Fuel Quality / Metrology

Christina Daniels

Presentation provided by Christina Daniels. The slides will be distributed following the meeting.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams/Ralph Richter

No update at this time.

VII. Open Discussion & Other Issues

Other Issues?

VIII. Next Meeting – Wednesday, April 4th at 3:00 PM Eastern