

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

**Wednesday, June 12, 2019
TIME: 3:00 – 4:00 pm (Eastern Standard Time)**

Minutes

Attendees

**Christina Daniels
Connor Dolan
Eric Prause
Mike Steele
Rob Early**

**Jay Keller
Juana Williams
Karen Quackenbush
Scott Lindsay
Stella Papasavva**

**Kelvin Hecht
Kevin Harris
Jennifer Hamilton**

I. Welcome and Housekeeping Items

- The Committee reviewed FCHEA's anti-trust guidelines - Available on FCHEA's members only website and a copy can be provided to you on request.
- The Committee approved the meeting agenda.
- The Committee approved the previous meeting minutes.

II. DOE/HQ Update

Laura Hill

Jay Keller for Laura Hill – DOE appreciates all assistance and support provided for the Annual Merit Review.

Karen Quackenbush – The DOE AMR presentations are available already.

https://www.hydrogen.energy.gov/annual_review19_codes.html

III. Codes & Standards 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 (GTR 13)

Shashi Kuppa

Nha Nguyen has left DOT and Martin Koubek (DOT) will take up his responsibilities on the GTR.

V. Codes and Standards Organization Updates

International Electrotechnical Commission (IEC TC 105)

Kelvin Hecht

The Micro Fuel Cell standard for power and data interchangeability has now been published as of May 22.

Kelvin will be reporting on hydrogen safety standards in Korea next week at an upcoming conference. Should anyone have issues or concerns relating to Korea that need to be addressed, please feel free to contact Kelvin directly.

International Standards Organization (ISO/TC 197) **Karen Quackenbush / Jay Keller**

Jay Keller – The 19880-1 document for fueling stations is in editing right now. On its way to FDIS. Several years ago when we started drafting the 19880-1, we anticipated that this document would come out much faster than other documents. We incorporated language in this document that would go on to become other standards, which explains why it is so large. These other standards will extract from this document in the future as they develop and mature.

19884 dealing with stationary tanks. US TAG will be meeting on this topic next week.

Karen Quackenbush – WG 22 – hydrogen fueling hoses – document is in editing. Expect to be sent to the Secretariat soon for FDIS vote.

Several other documents are in editing as well. The document on electrolyzers has gone to the Secretariat for FDIS vote shortly.

National Fire Protection Association (NFPA 2)

Carl Rivkin

Carl Rivkin left NREL and is now working for Nikola Motors. As a result, his membership in NFPA 2 is being updated and is no longer Chair of the Committee. Carl's new application is pending with NFPA.

Committee members are being sought for volunteers or nominations for the NFPA 2 Chairmanship. If you are a member of the Technical Committee, please contact Heath Dehn directly.

International Codes Council (ICC)

Spencer Quong

The latest documents have been completed and the next code cycle will begin again soon.

CSA Group

Sara Marxen

- HGV 4.3 *Fueling parameter evaluation standard* ballot closed June 5 for a new bi-national edition of the standard. We had sufficient affirmative votes to close the ballot with the Hydrogen Transportation Technical Committee, and no negative votes. There were some editorial comments that need to be reviewed by the Chairs and expect publication in the next month or so.
- HGV 4.1 *Dispenser standard* is out for Industry Review and closed recently. Comments are being reconciled currently.

- HGV 4.9 *Station standard* was out for Industry Review and closed a few weeks ago. The feedback generated 200+ comments.
- CSA Group will host its annual general meeting in Ottawa, Canada the week of June 17th, with TC/TSC meetings scheduled for June 19 – 21. Planning an in person meeting in October in Cleveland.

Society of Automotive Engineers (SAE)

Mike Steele

Had our meetings on Monday – Wednesday last week. The Materials Compatibility met on Monday. Safety and Standards met Tuesday and Wednesday.

The Materials Compatibility applied for a revision for 2579. 2578 requirements for vehicles in a crash test is holding many discussions on those issues.

Interface task force has four documents exploring J2600 interface document. Working through proposals on that.

J2601 pending proposals, done to the last minutia of getting it out to a vote quickly.

J2601-4 ambient fueling, at this for quite some time, should finish up comments and go out to vote in a month and a half.

J2719 is out for vote. We dealt with comments at the last meeting (172 comments / cleared 115 of them). Will hold a webex soon to deal with remaining comments. All the table comments are dealt with and is nicely aligned with ISO table.

J2799 communications document is out for technical revision.

Compressed Gas Association (CGA)

Rob Early

CGA recently updated standards H-3 cryogenic hydrogen storage for revision. The standard covers all aspects of liquid hydrogen storage tanks for reference by fire marshals or other AHJs.

G-5.5 fire testing. Testing is scheduled to be done this summer. Testing stack for radiation. Belief current methodology to calculate radiation levels is too conservative and not accurate, making it difficult to cite systems. Hopefully will continue to move along. Sandia and NREL are helping.

Expanding expertise on hydrogen to cover end uses as well. Anyone interested in discussing end uses or joining CGA can contact Rob Early.

American Society for Testing & Materials (ASTM)

Jennifer Hamilton

In person meeting at the end of June in Denver. Christina is co-chair on that. Working on the agenda. Will have some reporting out on the ILSs and get some new leads on a couple of documents for revision. Please contact me after this call if you would like more specifics.

American Society of Mechanical Engineers (ASME)

John Bendo

No update at this time.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

No update at this time.

Center for Hydrogen Safety

Nick Barilo

Jay Keller - HySAFE is incorporated out of Brussels and is the principal owner of the ICHS meetings. When the Center for Hydrogen Safety was created there was concern expressed that the two groups would not compete directly. As a result, HySAFE has a role on the Executive Committee of Center for Hydrogen Safety to ensure activities are collaborative.

Jennifer Hamilton - June 19th webinar on the Center for Hydrogen Safety.

Connor Dolan - There are upcoming Center for Hydrogen Safety Hydrogen 101 workshops being held in the Northeast over the coming weeks.

Regulatory Matrix Review and Comment

Karen Quackenbush

Latest version of the Matrix is here (updated March 31, 2019) –

<http://www.hydrogenandfuelcellsafety.info/s/FCHEA-Regulatory-Matrix-Markup-March-31-2019.pdf>

Please review this version of the Matrix and provide any updates to Karen Quackenbush at kquackenbush@fchea.org.

Permitting and Installation of Hydrogen Fueling Stations

California Station Implementation

Jennifer Hamilton

The CAFCP just participated in fueling tests for vehicles in San Francisco this week. We hope that goes through the approval process soon. Due to recent activities with NEL, timing remains uncertain for when the station will open.

California Div. of Measurement Standards/Fuel Quality / Metrology Kevin Schnepf

Christina Daniels – We proposed regulations change to CCR title 4 4002.9 for hydrogen gas measuring devices 3.39. If anyone is interested in commenting on these regulations or reviewing them, please contact Christina. The comments opened on May 31 and close in July.

Jennifer Hamilton – Learned recently from Santa Clara Fire that they received a hydrogen training from H2 Tools. There was positive feedback. This was a task completed for NREL. I am unsure if there are any future trainings planned.

Last night, myself, Juan, and Keith participated in an outreach event with the city of San Francisco on hydrogen station openings in the city.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams/Ralph Richter

Juana Williams – Was on travel during last meeting in April and provided a written summary on NIST handbook 44 section 3.39 on hydrogen gas measuring devices code. There is no change in the status from that update. It is still a voting item before the national conference on weights and measures. They will hear any testimony on the code on July 13-18. The proposals include changes to permanent, as well as changes to the code. Those changes were highlighted in our last meeting report and included test draft size (concern may not be able to test over full range of deliveries dispensers are capable of) as well as doubling the accuracy tolerances for small deliveries of minimum measured quality.

Jennifer – Are these basically the same thing, or are these proposals from California different?

Juana – The way that weights and measures operates in the US is we do not have a federal agency that enforces requirements, it is done at the state and local level. States can adopt Handbook 44 in its entirety, hold to lesser requirements, or add additional requirements within their jurisdiction. California in its rulemaking process moved several years ago to make the code permanent, we are just now getting to that stage nationally. The California code is not exact to what is included in Handbook 44 right now, they have pulled some from an international document. It was California who submitted the proposal to make the code permanent, as well as made some proposed changes to the code.

VII. Open Discussion & Other Issues

Karen Quackenbush - The agenda has changed slightly, including spelling out certain acronyms, to ensure that we are inclusive to folks learning more about these issues.

Jay Keller led a discussion of recent hydrogen incidents. There was consideration for hydrogen incidents report in future meetings.

VIII. Next Meeting – Will hold next meeting on Wednesday, July 10th at 3:00 PM EDT.