

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

**Wednesday, January 9, 2019
TIME: 3:00 – 4:00 pm (Eastern Standard Time)**

Minutes

Attendees

**Anthony Belvin
Bob Davidson
Chris LaFleur
Connor Dolan
Heath Dehn
Jay Keller**

**Justin Wu
Karen Quackenbush
Kelvin Hecht
Kevin Harris
Laura Hill
Mike Steele**

**Morry Markowitz
Nick Barillo
Norman Newhouse
Owen Hopkins
Stella Papasavva
Yuk Wong**

I. Welcome and Housekeeping Items

- Reviewed FCHEA's anti-trust guidelines - Available on FCHEA's members only website and a copy can be provided to you on request.
- Approved the meeting agenda.
- Approved the previous meeting minutes.
- Jay asked the attendees if there were any objections to recording the meeting for future fidelity. These recordings will not be posted or shared online.

II. DOE/HQ Update

Laura Hill

The federal government is operating under a partial government shutdown. The Department of Energy is not affected by this shutdown.

April 29 – May 1st will be the DOE Annual Merit Review and will be held at the Crystal City, Virginia Hyatt just outside of Washington, D.C.

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).

- SAE meeting in February in Torrance, CA
- GTR meeting in March 4-7 in Vancouver, Canada.
- DOE AMR in April 29 – May 1 in Crystal City, VA.
- ICHS 2019 will be held in Australia in September
- Fuel Cell Seminar 2019 November 5-7 in Long Beach, CA.

IV. Global Technical Regulations

Nha Nguyen

Jay Keller – Successful GTR meeting held in November 2018. The next GTR meeting with by March 4-7 in Vancouver at Powertech.

V. Codes and Standards Organization Updates

IEC TC 105

Kelvin Hecht

Active US Participation

- IEC 62282-1-100 Ed.1
Fuel cell modules – Safety
 - In translation for FDIS
- IEC 62282-3-100 Ed.2 (*Steve Maurer – FuelCell Energy*)
Stationary fuel cell power systems - Safety
 - In publication
 - CSA FC1 will initiate next edition
- IEC 62282-6-101 Ed.2 (*Karen Quackenbush*)
Micro fuel cell power systems – Safety
 - Re-establishing activity
- IEC 62282-6-400 Ed.1
Micro fuel cell power systems – Power & Data Interchangeability
 - FDIS
- AHG 8 (*Quackenbush, Hecht*)
Assessment of Existing TC105 Safety Standards
 - Prepare a draft for general safety requirements

Only Superficial US Participation

- IEC 62282-8-101 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Test procedures for solid oxide single cells and stacks
 - In translation for FDIS
- IEC 62282-8-102 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Test procedures for PEM single cells and stacks
 - CDV – closing date 3-8-19
- IEC 62282-8-201 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Power-to-power systems - Performance
 - CDV – closing date 3-8-19
- IEC TS 62282-9-101
Evaluation methodology for the environmental performance of fuel cell power systems

based on life-cycle thinking – Streamlined life-cycle considered environment performance characterization of stationary fuel cell power systems for *residential* applications

- Preparing comments to CD review
- Two environmental aspects considered
 - Greenhouse gas emission
 - Utilization of mineral resources

- IEC TS 62282-9-102
Fuel cell technologies - Part 9-102: Evaluation methodology for the environmental performance of fuel cell power systems based on life cycle thinking - Product category rules for environmental product declarations of stationary fuel cell power systems and alternative systems for *residential* applications
 - Preparing comments to CD review
 - Product Category Rule for ISO 14024

ISO/TC 197

Karen Quackenbush/ Glenn Scheffler/Jay Keller

Karen Quackenbush - A formal FDIS is being prepared to go out in the next several months. Should see items coming out regarding hoses, stations, stationary storage vessels, and possibly others. More information is available in the Regulatory Matrix.

Jay Keller – Restarted some work that was put on hold that Karen shared. That was put on hold due to more time taken by WG 24 than expected. WG 24 is being dissolved as its work is finishing up. Other groups which relied on / were subject to WG 24 work can no proceed to other activities. New work on quality specifications, quality control, dispensers, and all of Karen's work is now picking up again. We are very happy with the progress.

NFPA 2

Carl Rivkin

No report at this time.

ICC

Spencer Quong

Bob Davidson – Changes were approved by Committee at the consent agenda. Due to fire service concerns, pulled one of the changes.

CSA

Sara Marxen

Jay Keller – Thank you to CSA, Sara, and the team for hosting the TC 195 plenary in December.

SAE

Mike Steele

February 5 – 6 in Torrance CA. Opened the hydrogen quality standard J2719 for review. Also requested to have a presentation on hydrogen quality from Japan that has not been delivered in the United States before. J2601 will be going through some changes as well and have been coordinating with CSA 4.3 on that.

CGA**Rob Early**

No report at this time.

ASTM**Jennifer Hamilton**

No report at this time.

ASME**John Bendo**

Justin Wu – The group for B2112 has not met since October. The next meeting will be on March 12 at the ASME headquarters.

Section 8 Div 3 code case 2938 recently approved last month hydrogen code crack rate constant on stress intensity factor SA 372 and SA 373 steels and ASME construction.

VI. Discussion Topics**Facilitating Deployment****Carl Rivkin**

No report at this time.

H₂USA Activities**Karen Quackenbush**

H2USA is increasing its collaborating efforts with the California Fuel Cell Partnership and more information will be available in the future.

Regulatory Matrix Review and Comment**Karen Quackenbush**

Latest version of the Matrix is here (updated December 31) -

<http://www.hydrogenandfuelcellsafety.info/s/FCHEA-Regulatory-Matrix-Markup-Dec-31-2018.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**CA Station Implementation****Jennifer Hamilton**

Jay Keller – California now has 39 hydrogen stations, with several opening at the end of 2018. These stations include LAX, Palo Alto, and Citrus Heights.

Jennifer Hamilton Via Email - The joint AB 8 report from the CA Energy Commission and CA Air Resources Board was released, and can be found here:

<https://www.energy.ca.gov/2018publications/CEC-600-2018-008/CEC-600-2018-008.pdf>

CA DMS Fuel Quality / Metrology

Kevin Schnepf

Jay Keller – NIST is adopting a similar philosophy to California’s fuel quality / metrology regulation as are other entities internationally. This is a very positive sign for fuel cell vehicle / hydrogen station deployment to ease hydrogen fuel sale.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams/Ralph Richter

No report at this time.

VII. Open Discussion & Other Issues

Jay Keller – Heavy duty refueling is an issue that is starting to become a very active one, particularly with the recent market developments. A fueling protocol similar to J2601 is a hot topic. I invite this community to pay attention to this topic. Port and ship applications for fuel cells is also gaining attraction.

Mike Steele – From the SAE standpoint, there were a number of discussions ahead of the Plenary in Vancouver last year. SAE is sensitive to this and will have discussions on this topic at the February meeting on both the refueling protocol and interface hardware.

Jay – Nikola is driving much of this discussion as well at the ISO level. There is resistance at ISO on this protocol and there is support to do this at SAE.

VIII. Next Meeting – Wednesday, February 6, 2019 at 3:00 PM Eastern