

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

**Wednesday, February 5, 2020
TIME: 2:00 – 3:00 pm (Eastern Standard Time)**

Minutes

Attendees

**Chris LaFleur
Christina Daniels
Connor Dolan
Eric Prause
Ian MacIntire
Iris Monner
Jay Keller**

**Karen Quackenbush
Kelvin Hecht
Kevin Schnepf
Mark Richards
Mike Steele
Morry Markowitz
Norm Newhouse**

**Quailan Homann
Rob Early
Stella Papisavva
John Eiusen
Juana Williams
Kevin Harris**

I. Welcome and Housekeeping Items

The Committee reviewed FCHEA's anti-trust guidelines and meeting agenda.

The Committee approved the previous meeting minutes.

II. DOE/HQ Update

Laura Hill

Mark Richards – 2020 H2@Scale FOA has been released. This is available on the EERE Exchange website. Concept papers are due on February 25th. A modification was posted on January 27th. DOE staff are unable to take questions, but can be submitted through the website.

The DOE AMR is on May 19 – 21st in Crystal City, Virginia. The hotel block is up and open.

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).

DOE Safety Codes and Standards Joint Lab Meeting off site on the week of February 24th
(Invitation Only for DOE)

GTR13 meeting March 2-6 in Tokyo, Japan. The next GTR meeting will be in Brussels on June 2-5.

DOE Joint Tech Team Meeting the week of March 23rd in Southfield, Michigan USCAR
(Invitation Only for DOE)

IV. FuelCellStandards.com

Kelvin Hecht / Karen Quackenbush

<http://fuelcellstandards.com/> is open and available again. Please check it out and provide any feedback or updates to Kelvin Hecht.

V. Global Technical Regulations

Ian MacIntire

Getting ready to go to the March meeting in Tokyo and will have a detailed update following that meeting.

VI. Codes and Standards Organization Updates

International Electrotechnical Commission IEC TC 105

Kelvin Hecht

- IEC 62282-2-100:2020 PRV
 - Fuel Cell Modules - Safety
 - Pre release version
- IEC 62282-3-100:2019 RLV
 - Stationary fuel cell power systems - Safety
 - Redline version
- IEC 62282-8-101
 - Energy Storage – Fuel Cells in Reverse Mode – SOX single cells
 - Published
- IEC 62282-8-201
 - Energy Storage – Fuel Cells in Reverse Mode – Performance
 - Published
- Proposed New Work IEC 62282-4-600
 - Fuel cell power systems for unmanned aircraft systems (drones) – Performance test methods
 - Scope
 - Unloaded weight < 116 kg and maximum take-off weight < 150 kg
 - Fuel cell rated output voltage < 220 V DC

International Standards Organization ISO/TC 197

Karen Quackenbush/Jay Keller

19880-5 hoses and hose assemblies published in November. An amendment will be coming out to make some corrections. WG 22 is already on the first revision for this document.

Fittings – the CD draft is in editing now. Many issues were identified that are being resolved.

Compressors – WG 21 meet twice in 2019 and has another meeting in April 2020 in Washington, D.C. An official announcement will go out soon.

ISO 19880-1 fueling stations – passed FDIS unanimously. A few comments are being addressed. This was the lead document for the rest of the 19880 standards. This is very good news!

National Fire Protection Association NFPA 2

Chris LaFleur

Finalize on Friday the pathways on location and specific dates of the pre-first draft meetings of NFPA 2 with a target of April 2020. The end of the public input periods will be June 30, 2020.

The bulk storage task group which is working on studying releases of cold vapor and liquified hydrogen will complete the ventstack releases at Livermore National Laboratories. Sandia National Laboratories is anticipated to sign off.

International Codes Council (ICC)

Spencer Quong

Karen Quackenbush – It was noted that the International Fire Code is anticipated to open up for the next revision cycle shortly.

CSA Group

Iris Monner/Sara Marxen/Brent Hartman

- Active Projects
 - HGV 4.9 – *Hydrogen fueling stations* – The Technical Committee ballot closed. The standard is being finalized and will be published in February/ March 2020.
 - HGV 4.1 – *Hydrogen dispensing systems* – All TSC / Public Review comments have been dispositioned and the draft has been finalized for the Technical Committee ballot. It is posted now and closes February 21, 2020.
 - SPE 2.1.3 – *Best practices for defueling, decommissioning, and disposal of compressed hydrogen gas vehicle fuel containers* – Work is completed and expected publication in February 2020.
 - HGV 2 – *Containers* – The TSC continues to meet for content development.
 - HPRD 1 – *Thermally activated pressure relief devices* – The TSC continues to meet for content development.
 - HGV 4.4 – *Breakaway Devices, HGV 4.6 Manual Valves, and HGV 4.7 Automatic Valves* – The TSC continues to meet for content development.
 - HGV 4.10 – *Fittings* – The TSC continues to meet for content development
 - FC 1 – *Stationary fuel cell power systems* – The TSC continues to meet for content development
- Projects Launching Soon
 - HGV 5.1 – *Hydrogen Refueling Appliances*
 - HGV 4.2 – *Hoses for compressed hydrogen fuel stations*
 - HGV 3.1 – *Fuel system components for compressed hydrogen gas powered vehicles*
- Recently Published
 - HGV 4.3 – *Fueling parameter evaluation* published in July 2019. Work on the next edition of HGV 4.3 will be to align with definitions in the upcoming edition of SAE J2601.
 - CHMC 2 – *Chemical compatibility (Non-Metals)* published in August 2019.

Society of Automotive Engineers (SAE)

Mike Steele

Meetings were originally scheduled at the beginning of June but were rescheduled due to conflicts with the GTR to June 23rd and 24th at the Honda facility in Torrance, California.

Meetings were held last week at SAE to proceed on three documents.

J2601 is nearly complete in process.

J2601-4 ambient temperature document is anticipated for completion in March

J2572 is anticipated for affirmation ballot.

J2719 hydrogen fuel quality should proceed shortly to the motor vehicle council.

The heavy-duty group held its second meeting.

The interface group discussed the hydrogen screening process.

Compressed Gas Association (CGA)

Rob Early

Still on target for May 11th to hold hydrogen ventstack testing in Minnesota. The CGA G-5.5 will be reviewed and updated.

American Society for Testing & Materials (ASTM)

Jennifer Hamilton

Tabled for next meeting.

American Society of Mechanical Engineers (ASME)

Ray Rahaman

Tabled for next meeting.

VII. Discussion Topics

Facilitating Deployment

All

Conversations are ongoing with the City of Boston to answer questions on hydrogen.

Center for Hydrogen Safety

Nick Barilo

Jay Keller - Research priorities workshop will be held in the Fall on hydrogen safety with a global scope. We are in discussions with the center for hydrogen safety to potentially collocate.

Regulatory Matrix Review and Comment

Karen Quackenbush

<http://www.fchea.org/s/FCHEA-Regulatory-Matrix-markup-Dec-31-2019.pdf>

Please direct any updates, questions, or comments to Karen Quackenbush by email at kquackenbush@fchea.org.

Permitting and Installation of Hydrogen Fueling Stations

California Station Implementation

Jennifer Hamilton

By the end of March should be at 44 or 45 stations in retail operation.

California Div. of Measurement Standards/Fuel Quality / Metrology Christina Daniels

On January 23rd of this year we had a rulemaking to update specification and tolerances approved and enrolled to be updated. The regulations are more current to NIST handbook 44. We maintained an extended table of accuracy classes including 2, 3, 5, and 7. We have a reference to a legacy classification class 10.

The device systems submitted for type application operated at a high tolerance. The technology is improving and the new table reflects that capability.

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

Juana Williams/Ralph Richter

No updates at this time.

VIII. Open Discussion & Other Issues

No further topics at this time.

IX. Next Meeting – Wednesday, March 11th at 2:00 PM US Eastern.