



Fuel Cell &
Hydrogen Energy
Association

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

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

Minutes

Attendees

**Carl Rivkin
Chris LaFleur
Connor Dolan
Ernst Baumgartner
Jay Keller
Jennifer Hamilton
Joe Gagliano**

**John Grimes
Juana Williams
Karen Quackenbush
Laura Hill
Marcia Poxson
Mike Steele
Nick Barilo**

**Norm Newhouse
Sara Marxen
Spencer Quong
Steven Yip
Susan Bershad
Will James**

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 reviewed the meeting agenda.

The Committee approved the July draft meeting minutes.

II. DOE/HQ Update

Will James

Station in D.C. opened – 30 kilogram electrolyzer system to showcase the refueling technology in the district. This is in collaboration with the National Park Service. We had Honda, Toyota, and Hyundai vehicle at the opening. The Park Service will receive a Mirai for use.

Sustainable Transportation Summit – very successful. Monday afternoon on future of transportation. Tuesday morning a session focused on the work being conducted in H2USA, infrastructure perspective, and discussion of H2@Scale concept.

HyTEST RFI closed – good feedback received. A second RFI on hydrogen infrastructure RD&D just went out. Link to the RFI here - <https://eere-exchange.energy.gov/Default.aspx#Foald7f0fc6b2-2f8c-47e1-b025-ec265b004b03>

III. C&S Events and Fuel Cell Safety Information

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

Kelvin Hecht

Note for Kelvin - NFPA 2 meeting is the week of August 22, not August 2.

<http://www.hydrogenandfuelcellsafety.info/meetings.asp>

Karen Quackenbush

Note for Safety Report calendar – IA HySafe holding research workshop in the Netherlands on September 26th and 27th, followed by 28th general assembly for HySafe

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

No report at this time.

V. Codes and Standards Organization Updates

IEC TC 105

Kelvin Hecht

- CSA has initiated an activity to adopt ISO 16110-1, *Hydrogen Generator Using Fuel Processing Technologies* as the US standard CSA FC5
- Others are welcome to participate
- Will meet in person in Scottsdale

ISO/TC 197

Jay Keller / Glen Scheffler

CGA hosted working group 21, 22, and 23 recently in their offices. Anticipate minutes from those meetings to be available soon.

WG 21 (compressors) a few manufacturing participants on the calls and received much useful input to improve the standard.

WG 22 (hoses) – could use more hose manufacturer participants. Identified some regulations / requirements that could apply. Had some manufacturers from Japan to not only provide work, but also assisting in compiling draft CD.

WG 23 (fittings) – moving towards CD. Spoke with folks from Japan working on valves (WG 20) – the WG 20 is out for vote now and collecting comments. Learned some things regarding approach and ways to develop these component standards.

WG 24, 27, and 28 (quality control) - suite of standards are for licensing of fueling standards. WG 28 went to CD, and passed vote. That means WG 24 placeholder on quality control will be removed. WG 27 is working on how to move forward. WG 24 finished CD, vote came back positive, there were two negative votes with a couple of substantial comments, several other countries who voted to pass had similar comments, WG 24 will resolve those comments and submit a second CD in September.

NFPA 2

Carl Rivkin / Susan Bershad

The joint first draft meeting for NFPA 2 and NFPA 55, will be the week of August 22 in Alexandria, VA. Agenda package sent to the committee members available on nfpa.org/2 or nfpa.org/55. 745 page PDF of comments.

Carl Rivkin is now the chair of NFPA 2. Carl and Rob Early (Chair of NFPA 55) are going through the comments to review and prepare to go through all of them in 5 days.

Committee members are asked to review the agenda package ahead of time to ensure the meeting proceeds in a timely manner. This is a public meeting, but if you will be attending, please contact Susan Bershad ahead of time to make proper arrangements.

Proposed changes on NFPA 2 and NFPA 55 have been sent to the FCHEA Transportation Working Group for review and endorsement.

ICC

Bob Davidson

No report at this time.

Will seek report on the I-code proposal on repair booths which was presented at the ICC meeting in April and is being further developed to be more inclusive of other fuels.

CSA

Sara Marxen

HPIT 2 review period ends later this week – will be out in another week or so.

US Committee Week is September 26-29 in Scottsdale, Arizona. The only hydrogen work going on at the US Committee week is the TC 105.

SAE

Mike Steele / Tim McGuire

Tim McGuire is working on a telecom for next week to discuss the changes on J2601. Those on that committee are asked to please respond to the Doodle poll.

There will be a live discussion on document SAE J2719-1 on August 13th regarding comments received.

Glenn indicated he has a full slate for meetings on SAE J2578 and SAE J2579.

ASTM

Tommy Rockward

No report at this time.

ASME

John Grimes

The ASME B31 Code for Pressure Piping Standards Committee is balloting a proposal for a Code Case for Composite Piping for Hydrogen Service with ASME B31.12 Hydrogen Piping standard. The Code Case will allow for the use of composite piping for gaseous hydrogen service in accordance with the requirements of B31.12 along that the additional requirements of the Code Case are met.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

Charlie Myers (MassH2) and Carl presented on hydrogen fueling stations and deployment of fuel cell vehicles at the Associate of State Fire Marshalls in Albuquerque recently. Important to get this information to this key audience. Productive presentations and good questions.

Working with Telecommunications Industry Association (TIA) on siting of fuel cell systems for telecom applications. The “Compliance with Regulations, Codes, and Standards for Fuel Cells TIA Reference Guide” will be published online within a week.

Hydrogen fueling station permitting video that NREL supported with the Orange County Fire Authority was premiered at the Orange County Fire Association recently. Many of the hydrogen fueling stations are built in this county currently. Video will be released publicly relatively soon.

H₂USA Activities

Karen Quackenbush

H2USA joint RCS task team had a webinar last week. Focused on regional issues of deployment for fuel cell vehicles. Focusing more on New York and Boston moving forward.

H2FIRST

NREL/SNL

No report at this time.

Regulatory Matrix Review and Comment

Karen Quackenbush

Any questions or comments on the Regulatory Matrix can be sent to Karen Quackenbush (kquackenbush@fchea.org / 202-308-2353).

VII. Permitting and Installation of Hydrogen Fueling Stations

Ca Station Implementation

Jennifer Hamilton

Joe Gagliano will be participating on this call on behalf of CAFCP moving forward through the rest of the year as Jennifer will be on maternity leave.

In CA, working on station openings and the process to go from operational to open. Label on stations called Soft opening, series of events to occur to go from soft opening to fully opened.

Next batch of stations set to open in September timeframe.

Ca DMS Fuel Quality / Metrology

Kevin Schnepf

Karen Quackenbush – similar effort underway in Colorado currently. Open call for comments on proposed regulations and public hearing to be held on Monday.

Carl Rivkin – will be attending in person. Any concerns can be relayed to me, though written comments are preferred.

<https://www.colorado.gov/pacific/ops/news/public-hearing-notice-retail-hydrogen-fueling-regulations>

Fueling Compliance

Sara Marxen / Jesse Schneider

Nothing new until CSA HGV 4.3 is published.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams

U.S. Weights and Measures Standards Development Process
Commercial Devices

The 101st National Conference on Weights and Measures (NCWM) Annual Meeting met July 23-28, 2016 in Denver, CO. Two proposals (shown below) to modify NIST Handbook 44 Section 3.39 Hydrogen Gas-Measuring Devices-Tentative Code on the NCWM Specifications and Tolerances (S&T) Committee agenda were adopted. The hydrogen gas devices code will be modified to recognize that required information on sealable metrological parameters may also be made available in an electronic format on Category 3 devices. A modified version of S&T Item 339-2 widens the current hydrogen code acceptance tolerance of 1.5 % to 5.0 % and the current maintenance tolerance of 2.0 % to 7.0 %. The code will have only one accuracy class designated as Accuracy Class 7.0.

The July 2016 NCWM adopted a proposal to recognize that the required information record of adjustments and changes to sealable metrological parameters may also be made available in an electronic format on Category 3 devices.

<p>S.3.3. Provision for Sealing. – Adequate provision shall be made for an approved means of security (e.g., data change audit trail) or physically applying security seals in such a manner that no adjustment may be made of:</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p>When applicable, the adjusting mechanism shall be readily accessible for purposes of affixing a security seal. Audit trails shall use the format set forth in Table S.3.3. Categories of Device and Methods of Sealing.</p>	
<p>Table S.3.3. Categories of Device and Methods of Sealing</p>	
<p>Categories of Device</p>	<p>Method of Sealing</p>
<p>.</p> <p>.</p> <p>.</p>	<p>.</p> <p>.</p> <p>.</p>
<p>Category 3: Remote configuration capability access may be unlimited or controlled through a software switch (e.g., password).</p>	<p>An event logger is required in the device; it must include an event counter (000 to 999), the parameter ID, the date and time of the change, and the new value of the</p>

<p>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</p>	<p>parameter. A printed copy of the information must be available <u>on demand</u> through the device or through another on-site device. <u>The information may also be available electronically.</u> The event logger shall have a capacity to retain records equal to 10 times the number of sealable parameters in the device, but not more than 1000 records are required. (Note: Does not require 1000 changes to be stored for each parameter.)</p>
<p>[Nonretroactive as of January 1, 1995] (Table Added 1995) (Amended 1995, 1998, 1999, and 2006 and 2016)</p>	

The NCWM also adopted a proposal that modifies the existing performance tolerance and replaces it with a wider new tolerance and a corresponding new accuracy class designation.

T.2. Tolerances. – The tolerances for hydrogen gas measuring devices are listed in Table T.2. Accuracy Classes and Tolerances for Hydrogen Gas-Measuring Devices. (Proposed tolerance values are based on previous work with compressed gas products and will be confirmed based on performance data evaluated by the U.S. National Work Group.)

<p align="center">Table T.2. Accuracy Classes and Tolerances for Hydrogen Gas-Measuring Devices</p>			
<p align="center">Accuracy Class</p>	<p align="center">Application or Commodity Being Measured</p>	<p align="center">Acceptance Tolerance</p>	<p align="center">Maintenance Tolerance</p>
<p align="center">2.0 <u>7.0</u></p>	<p align="center">Hydrogen gas as a vehicle fuel</p>	<p align="center">4.5 <u>5.0</u> %</p>	<p align="center">2.0 <u>7.0</u> %</p>

(Amended 2016)

Please contact juana.williams@nist.gov if you have questions.

VIII. Open Discussion & Other Issues

No additional topics discussed.

IX. Next Meeting

The next meeting will be held on September 7th at 3:00 PM.