

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

**Wednesday, July 5, 2017  
TIME: 3:00 – 4:00 pm (Eastern Standard Time)**

**Minutes**

**Attendees**

**Aaron Harris  
Bob Boyd  
Carl Rivkin  
Christina Daniels  
Connor Dolan  
Elan Bond  
Eric Nelson**

**Jay Keller  
Jennifer Hamilton  
Juana Williams  
Karen Quackenbush  
Kevin Schnepf  
Laura Hill  
Marcia Poxson**

**Nick Barilo  
Norm Newhouse  
Ralph Richter  
Sara Marxen  
Spencer Quong  
Wilford-Andreas**

**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.
- Reviewed the meeting agenda as modified.
- Approved the previous meeting minutes for May 2017.

**II. DOE/HQ Update**

**Will James**

Laura Hill – No updates at this time. Thank you for your support of the DOE AMR.

**III. C&S Events and Fuel Cell Safety Information**

[http://www.fuelcellstandards.com/calendar\\_new.html](http://www.fuelcellstandards.com/calendar_new.html)

**Kelvin Hecht**

<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](mailto:khall@fchea.org)) or Connor Dolan ([cdolan@fchea.org](mailto:cdolan@fchea.org)).

**Request:** Please notify Karen or Connor of any meetings / events to add to the calendar.

**Action:** Will add the following meetings to the calendar:

- OIML meeting 18<sup>th</sup> – 20<sup>th</sup> of September in the Netherlands
- ISO/TC 197 WG 22 meeting will be held 14-15 September in Hartford, CT
- ISO/TC 197 WG 24 meeting will be held 18-22 September in Hartford, CT
- WHTC (Prague) Week of July 9, 2017

#### **IV. Global Technical Regulations**

**Nha Nguyen**

No updates at this time.

#### **V. Codes and Standards Organization Updates**

##### **IEC TC 105**

**Kelvin Hecht**

Notices seeking information on potential WG meetings to be held in conjunction with the plenary meeting in November.

##### **ISO/TC 197**

**Glenn Scheffler/Jay Keller**

WG 24 meeting just held in Seoul, Korea. Proceeding to DIS. Productive week going through comments. Document is expected to go out very soon, expectation for comments for September meeting in Connecticut. Restructuring is continuing.

WG 21 and 23 – no updates at this time.

ISO Standard on Metal Hydrides – out for review and comment. US TAG meeting this month to discuss technical comments received.

##### **NFPA 2**

**Susan Bershad**

Technical Committee members expected to receive ballot soon. Expect website will soon allow public to view edits and make further comment.

##### **ICC**

**Bob Davidson**

Revision of international fire code ended last year. Not currently in cycle.

##### **CSA**

**Sara Marxen**

Working on HGV 4.3 and SAE Quarterly meeting last month in June provided the issues to coordinate on. Will schedule meeting in July (19<sup>th</sup> potential).

CHMC 2 – will also meet in mid-July. Date TBD.

##### **SAE**

**Mike Steele**

Schedule for upcoming meetings reviewed.

J2719-1 (companion for 2601) – out for affirmation ballot. Happened just after in person meeting. Mike had made some changes based on input received.

##### **ASTM**

**Jennifer Hamilton**

Jennifer is the chair of 314 subcommittee – meeting was helpful. Went quickly through agenda items and got clarity on some inter-laboratory studies.

Christine Daniels - One document that cannot renew as no one is running the method (D7550). Balloted to be removed / withdrawn but the document will still be available as a reference document.

Jennifer Hamilton - The method will expire if something is not done by the end of the year. Jennifer has reached out to the Technical contact.

Working on roster as well.

## **ASME**

**John Bendo**

No update at this time.

## **VI. Discussion Topics**

### **Facilitating Deployment**

**Carl Rivkin**

TIA Fuel Cell Deployment Guide has been released for the telecom industry for stationary fuel cells. A second document is underway as well for background information on fuel cells, what installations look like, safety issues, etc. Anyone interested in working on this can contact Carl Rivkin or Karen Quackenbush.

Jay Keller – Need to also embrace fuel cells that are not just stationary systems, but vehicles that are providing power output. This may not be directly relevant to TIA but TIA does have interest in a broader scope than just cell towers.

Amy Ryan – NFPA standard (855) in development for stationary systems. Is this related?

Carl Rivkin – 855 does address stationary energy storage facilities. NFPA 853 covers stationary fuel cell installations. The TIA documents provide guidance for project developers.

### **H<sub>2</sub>USA Activities**

**Karen Quackenbush**

H2USA held an all hands meeting at the AMR.

### **H2FIRST**

**NREL/SNL**

Carl Rivkin – Working on station footprint project. Looking at ways to reduce an H2 station footprint. Held expert interviews to get better understanding of various systems. Next step is risk analysis for below vs above grade storage configurations. Chris LeFleur is spearheading this effort. At the end of the project, the goal is to have done some detailed analysis on these stations and codes related to them to propose potential changes.

### **Regulatory Matrix Review and Comment**

**Karen Quackenbush**

<http://www.fchea.org/s/FCHEA-Regulatory-Matrix-markup-March-13-2017.pdf>

Two items being added to the matrix this quarter are regulations pertaining to drones, and information on the new, evolving rules for fuel cells and hydrogen for the maritime industry.

### **Permitting and Installation of Hydrogen Fueling Stations**

## Ca Station Implementation

Jennifer Hamilton

28<sup>th</sup> station now open in Lawndale.

CEC business meeting just approved nine stations from last NOPA. Remaining expected to come up at next business meeting in August.

Operations and maintenance awards will be in another NOPA.

## Ca DMS Fuel Quality / Metrology

Kevin Schnepf

Have sampled and tested 16 stations in CA. Collected samplings from random stations for fuel quality compliance and generate data to assist policy and technology moving forward

Metrology – five design iterations that have CA type approval cert. Three addition are pending that have done initial testing and have temporary use permit – expect completion by end of summer. Additional design type just received and will conduct testing in the Fall.

Hydrogen gas measuring devices – adopting tentative code in Handbook 44. Will remove tentative status and then adopt and accept tolerances. This resolves the sunset clauses for accuracy tolerances that come up at the end of the year.

## Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams

### New OIML Document and Meeting in September

Ralph Richter provided an update on the revision to OIML R139. This OIML Recommendation provides the international technical requirements and testing procedures (this corresponds to the domestic hydrogen code that is found in NIST Handbook 44).

We now have first committee draft (1CD) of the revision to OIML R139 that was last published in 2014. The document is entitled “Compressed gaseous fuel measuring systems for vehicles,” and was originally focused on fueling systems for compressed natural gas (CNG). This revision cycle is now focused on expanding the application of the recommendation to hydrogen systems. Japan and the Netherlands are the Co-conveners of this revision project, and Ralph is providing the US representation on the project group. Ralph needs assistance on how to best get this group to review the document and send comments back to him. **Ralph needs comments on R139 returned to him by 18 August 2017**, and then he will send all US comments to the conveners by August 25<sup>th</sup>.

Major changes in the document – two new MPEs for hydrogen systems (accuracy classes that are significantly higher than those for CNG systems). Minimal measured quantity is 1 kilogram. The durability test was revised so that now only meters with moving parts need to be tested. Sections of the R139 testing procedures were re-written to make to make them applicable specifically to hydrogen systems.

A meeting of the OIML R139 Project Group is scheduled for 18–20 September 2017 in Delft , The Netherlands. Anyone interested can accompany Ralph to participate as part of the US delegation to the meeting.

Anyone interested in participating in this on the call can contact Ralph or Juana for more details. FCHEA's Transportation Working Group will also plan on participating.

Karen / Jay – request a brief paragraph write-up of the changes detailing potential changes to get membership of FCHEA interested.

## **VII. Open Discussion & Other Issues**

### **Other Issues?**

No other issues at this time.

## **VIII. Next Meeting - Wednesday, August 2<sup>nd</sup> at 3:00 PM Eastern.**