

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

**Wednesday, August 3, 2022
TIME: 2:00 PM EDT**

Minutes

**Claire Behar
Shawn Cole
Christina Daniels
John Eihusen
Jennifer Hamilton
Kelvin Hecht
Owen Hopkins**

**Rob Kaminsky
Jay Keller
Mark Luth
Norman Newhouse
Douglas Olenick
Haboon Osmond
Rino Pinti**

**Karen Quackenbush
Spencer Quong
Carl Rivkin
Christine Watson
Trey White
Juana Williams**

I. Welcome and Housekeeping Items

NHFCSCC reviewed FCHEA's Anti-trust guidelines and approved the meeting agenda.

II. Introductions

Haboon Osmond has joined FCHEA's staff as our Technical Affairs Coordinator.

III. DOE/HQ Update

Christine Watson

- NOI to issue FOA in support of the hydrogen shot and a university research consortium on grid resilience: <https://eere-exchange.energy.gov/Default.aspx#Foaldddc3466-5d8d-4092-8a9b-269d2bda3629>
- NOI to issue FOA - Bipartisan Infrastructure Law: Additional Clean Hydrogen Programs: Regional Clean Hydrogen Hubs: <https://eere-exchange.energy.gov/Default.aspx#Foalddd3fb3cd-2dde-4317-a342-697b9d1c3abc>
- HFTO 2022 Annual Merit Review Plenary Session Recordings and Presentations are online: https://www.hydrogen.energy.gov/annual-review/annual_review22_proceedings.html
- LH2 and Bulk Storage of GH2 Workshop Reports are online: <https://www.energy.gov/eere/fuelcells/workshop-and-meeting-proceedings>
- HFTO Hiring Opportunity: <https://www.energy.gov/eere/fuelcells/hydrogen-and-fuel-cell-technologies-office-careers>

IV. Codes & Standards Events and Fuel Cell Safety Information

Karen Quackenbush

- Calendar of events: <https://www.hydrogenandfuelcellsafety.info/events/>
- Any committee members who have materials they would like hosted on the website can send them to Karen Quackenbush (kquackenbush@fchea.org) or Haboon Osmond (hosmond@fchea.org).

V. Global Technical Regulations

Ian MacIntire

- No updates

VI. Codes and Standards Organization Updates

Institute of Electrical and Electronics Engineers

Mark Siira

- IEEE 1547 is now open for revision and seeking IEEE members who want to help with the revision review. If interested in participating in the revision of IEEE 1547, please contact Karen Quackenbush (kquackenbush@fchea.org).
- IEEE has announced a new ad hoc committee on climate change to coordinate its response to the global threat: <https://spectrum.ieee.org/ieee-plan-combat-climate-change>

International Electrotechnical Commission IEC TC 105

Kelvin Hecht

- No updates

International Standards Organization ISO/TC 197

Karen Quackenbush/Jay Keller

- ISO WG 24 face-to-face meeting, PRYHDE, and WG 5 will meet in the week of September 20 through next week (limited in-person space, so only open to members of WG; if not a member, please register through US TAG).
- The 2022 Plenary meeting in early December in Sydney, Australia, includes WG 21 and 23.

National Fire Protection Association NFPA 2

Chris LaFleur

- NFPA 2 is balloting its 2nd draft meeting.
- The deadline for the technical committee to make changes to the ballot is August 4th.

International Codes Council (ICC)

Spencer Quong

- No updates

Society of Automotive Engineers (SAE)

Mike Steele

Task Force	Document	Title	Issue/Revised/WIP Date	Status
Interface	J2600_201510	Compressed Hydrogen Surface Vehicle Fueling Connection Devices	21-Oct-15	Being revised in conjunction with ISO 17268
Interface	J2601_202005	Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles	29-May-20	Being revised
Interface	TIR J2601/2	Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles	24-Sep-14	Considering Stabilization
Interface	TIR J2601/3	Fueling Protocol for Gaseous Hydrogen Powered Industrial Trucks	12-Jun-13	Ballot passed. Comment reconciliation process underway.
Interface	TIR J2601/4	Ambient Temperature Refueling	21-Nov-16	Being developed.
Interface	TIR J2601/5	HD Fueling using the MC Method (title may change)	July 2022	Being developed
Safety	J1766_201401	Recommended Practice for Electric, Fuel Cell and Hybrid Electric Vehicle Crash Integrity Testing	10-Jan-14	Revised - Action required. Awaiting GTR 13 Phase 2

Safety	J2578_201408	Recommended Practice for General Fuel Cell Vehicle Safety	26-Aug-14	Revised - Action required. Awaiting GTR 13 Phase 2
Safety	J2579_201806	Standard for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles	15-Jun-18	Will be selectively revised with material compatibility revisions.
Safety	WIP J2990/1_201606	Gaseous Hydrogen and Fuel Cell Vehicle First and Second Responder Recommended Practice	2-Dec-19	Being revised?
Fuel Economy	TIR J3202	Recommended Practice for Measuring and Simulating Fuel Consumption and Range of Heavy Duty Fuel Cell Hybrid Road Vehicles Fueled by Compressed Gaseous Hydrogen	25-Apr-19	Being developed

CSA

Sara Marxen

Active Projects		
TSC	Designation/Title	Status
HGV 5	HGV 5.2, Compact hydrogen fueling systems	This project is to develop a NEW standard for Compact Hydrogen Fueling Systems (HGV 5.2). The Technical Committee Ballot closed on July 12 with negative votes and comments. Working with the TC and TSC Chairs to disposition.
HGV 3	HGV 3.1, Onboard vehicle components for hydrogen gas vehicles	This project is a revision of an existing standard for technology updates, as well as inclusion of the on-board vehicle hose requirements (transferred from HGV 4.2). The TSC is dispositioning Technical Committee Ballot comments.
HGV 2	HGV 2, Compressed hydrogen gas vehicle fuel containers	This project is a revision of an existing standard. Content development meetings have concluded and the public review period closed July 11. The TSC is dispositioning comments.
HGV 4.1	HGV 4.5, Priority and sequencing equipment for hydrogen vehicle fueling	This project is to develop a standard to REINSTATE an updated edition of a Priority and Sequencing standard. A seed document draft has been prepared and a kickoff meeting with the HGV 4.1 TSC is being scheduled for August 2022.
C22.2 No. 22734	Hydrogen generators using water electrolysis	The CSA technical subcommittee continues to work on a binational adoption of ISO 22734. Contact Mark Duda (mark.duda@csagroup.org) with questions or for additional information.

Compressed Gas Association (CGA)

Rob Early

- No updates

- The hydrogen technology committee will be in-person at the CGA headquarters in November 2022.

American Society for Testing & Materials (ASTM)

Jennifer Hamilton

- A potential workshop in June 2023 on hydrogen blending with natural gas.
- Two new standards were published in July 2022, which are D7892 and D7675.

American Society of Mechanical Engineers (ASME)

Ray Rahaman

- No updates

VII. Discussion Topics

Facilitating Deployment

All

- A need to do more grassroots outreach

Center for Hydrogen Safety

Jennifer Hamilton

- Three conferences will occur concurrently during the week of September 19-22 in Anaheim, California.
 - The 2022 Center for Hydrogen Safety Americas Conference will be held in the Anaheim Convention Center from September 20 to September 22. Please visit this link to learn more and register: <https://www.aiche.org/chs/conferences/center-hydrogen-safety-conference/2022>
 - The 2022 International Zero Emission Bus Conference will be held in the Anaheim Convention Center from September 19 to September 21. Please visit this link to learn more and register: <https://www.zebconference.com/>
 - RE+ will be held in the Anaheim Convention Center from September 19 to September 22. Please visit this link to learn more and register: <https://www.re-plus.com/>

Regulatory Matrix Review and Comment

Karen Quackenbush

- This Matrix is updated quarterly and keeps FCHEA members up-to-date in the development of codes, standards, and regulations.
- As of June 30, 2022: <https://static1.squarespace.com/static/5668416ddc5cb4375e2a9ef8/t/62c5d3f5f956bc4964022777/1657132022012/FCHEA+Regulatory+Matrix+Markup+June+30+2022.pdf>
- Please direct any updates, questions, or comments to Karen Quackenbush via email at kquackenbush@fchea.org or Haboon Osmond at hosmond@fchea.org.

Permitting and Installation of Hydrogen Fueling Stations

California Station Implementation

Jennifer Hamilton

- There are 56 online stations and 118 stations in development.
- There have been improvements in station up-time.

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

- There will be a NIST Handbook 44 Hydrogen Gas-Measuring Devices Code Pre-Rulemaking Workshop on Thursday, August 11th in Sacramento, California, to develop regulatory language to amend Section 3.39. Hydrogen Gas-Measuring Devices Code.
- To register, please visit this link:
<https://attendee.gotowebinar.com/register/131925327213675787>
- The Sacramento lab is expected to reopen at the end of August.
- The Anaheim lab is expected to reopen at the end of September.

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

Juana Williams

- No updates

VIII. Open Discussion & Other Issues

- None

IX. Next Meeting – Wednesday, September 7th at 2:00 PM US Eastern Time