

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

**Wednesday, December 7, 2022
TIME: 2:00 PM EDT**

Minutes

**Shawn Cole
Michael Conrad
Connor Dolan
Rob Early
John Eihusen
Jennifer Gangi
Kelvin Hecht
Shinichi Hirano
Owen Hopkins
Rob Kaminsky
Ian MacIntire**

**Norm Newhouse
Douglas Olenick
Haboon Osmond
Karen Quackenbush
Spencer Quong
Mike Sigler
Mike Steele
Christine Watson
Juana Williams**

I. Welcome and Housekeeping Items

- a. The NHFCSCC reviewed FCHEA's anti-trust guidelines, approved previous minutes, and approved the meeting agenda.

II. DOE/HQ Update

Christine Watson

- SBIR FY23 Phase 1 Release 2 topics have been posted online. FOA issued December 12, 2022. LOI due January 3, 2023. [SBIR Funding Opportunity Announc... | U.S. DOE Office of Science \(SC\) \(osti.gov\)](#)
- HFTO topics:
 - Low-Temperature Reversible Fuel Cells
 - Advanced Thermal Management Technologies for Fuel Cell Heavy-Duty Vehicle Applications
 - Fast Response Flow Control Valves for Gaseous Hydrogen Fueling of Fuel Cell Vehicles
 - Hydrogen Leak Quantification Technologies for Environmental Monitoring
 - Hydrogen Fuel Cell Powered Urban Air Mobility Feasibility Study
 - Hydrogen Sustainability Assessment Methods for Project Development
 - Liquid Hydrogen Fueling and Delivery Components
 - Fuel Cell and Electrolyzer Manufacturing Quality Methods
 - Power Electronics Manufacturing Improvements for Heavy-Duty Fuel Cell Vehicle Applications
 - Fuel Cell Bipolar Plate Protective Coating Manufacturing and Refurbishment Development
 - Non-PFSA Membranes for Electrolyzers and Fuel Cells
 - Electrolyzers for Impure Water Operation
 - Alkaline Exchange Membranes for Water Electrolyzers

- FY22 HFTO FOA “In Support of the Hydrogen Shot and a University Research Consortium on Grid Resilience” closed for applications on December 1.

III. Codes & Standards Events and Fuel Cell Safety Information Karen Quackenbush

- Calendar of events: <https://www.hydrogenandfuelcellsafety.info/safety-report-calendar>
- 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).

IV. Global Technical Regulations Ian MacIntire

- GTR 13 Phase 2 is expected to be approved by GRSP in their meeting this week. Then, it would be boarded to WP 29 for consideration at their March 2023 meeting. If all goes well, then it is expected that WP 29 will vote on establishing the Phrase 2 document in their June 2023 meeting.

V. Codes and Standards Organization Updates

Institute of Electrical and Electronics Engineers Mark Siira

- IEEE 1547 is open for revision and is seeking IEEE members who want to help with the revision review starting on the week of January 9th.
- If interested in participating in the revision of IEEE 1547, please contact Karen Quackenbush via email at kquackenbush@fchea.org.

International Electrotechnical Commission IEC TC 105 Kelvin Hecht

Published in 2022

- ❖ **IEC 62282-3-201 Amendment 1**
 - Stationary Fuel Cells – Performance for Small FCPS
- ❖ **IEC 62282-4-101**
 - Forklifts – Safety
- ❖ **IEC 62282-4-600**
 - Fuel cell/battery hybrid for Excavators

In Progress (red=new documents, black=updates of published documents)

- ❖ **IEC 62282-2-400**
 - Calculation of rated power & power density of PEM stacks/modules
- ❖ **IEC 62282-3-100**
 - Stationary fuel cells – Safety
- ❖ **IEC 62282-3-200**
 - Stationary fuel cells – Performance
- ❖ **IEC 62282-3-201**
 - Stationary fuel cells – Performance for small FCPS
- ❖ **IEC 62282-3-202**
 - Stationary fuel cells – Performance for small FCPS with supplementary heat
- ❖ **IEC 62282-4-102**
 - Forklifts – Performance

- ❖ **IEC 62282-4-202**
 - Unmanned aircraft – Performance
- ❖ **IEC 62282-6-101**
 - Micro fuel cell – General requirement
- ❖ **IEC 62282-6-106**
 - Micro fuel cell – Indirect Class 8 compounds
- ❖ **IEC 62282-6-107**
 - Micro fuel cell – Indirect water-reactive compounds
- ❖ **IEC 62282-6-401**
 - Micro fuel cell – Performance for laptops
- ❖ **IEC 62282-7-1**
 - Single cell performance for PEM
- ❖ **IEC 62282-7-2**
 - Single cell/stack performance for SOFC
- ❖ **IEC 62282-8-201**
 - Fuel cells in reverse – Power to power
- ❖ **IEC 62282-8-301**
 - Fuel cells in reverse – Power to methane
- ❖ **IEC 63341-3**
 - Railway application - Performance

International Standards Organization ISO/TC 197

Karen Quackenbush

- On December 7th, SC 1 (Hydrogen at scale and horizontal energy systems) met in Sydney, Australia.
 - In the meeting, SC 1 recognized that some countries have already established their national mirror committees for experts for SC 1, some countries haven't yet, and some don't plan to. Items will still be balloted through SC 1 and TC 197 to ensure that experts are aware of them.
 - There are some documents that are being developed or revised that TC 197 will move over to SC 1, such as electrolyzer technologies (grid interconnection applications).
 - There have been some concerns surrounding the organization of TC 197 and SC 1.
- On December 5th, WG 21 met in Sydney, Australia. The meeting focused on clarifying ISO 19880-4 (Gaseous hydrogen -- Fueling stations -- Part 4: Compressors), such as the role of general compressor requirements and whether to include TC 118 SC1.
- On December 5th, WG 22 met in Sydney, Australia, and worked on ISO 19880-5:2019 (Gaseous hydrogen — Fueling stations — Part 5: Dispenser hoses and hose assemblies). Key technical questions from WG members have been resolved as well.
- The following WGs also met in Sydney, Australia: WG 15, WG 24 (virtual only), and WG 31
- TC 197 Plenary will meet on December 8th and December 9th.

National Fire Protection Association NFPA 2

Chris LaFleur

- No NITMAMs for the 2023 revision document; therefore, the Standards Council will approve the revised doc at their next meeting (December), and the 2023 version will be published in early 2023.

- The combined working group on coordinating the NFPA 2 and 55 content is hard at work, led by Rob Early.
 - A task group is working to resolve any hydrogen overlap between NFPA 2 and NFPA 55. NFPA 2 will own all of the scope for hydrogen, so instead of extracting material from NFPA 55, it will be deleted from NFPA 55 and moved to NFPA 2.

International Codes Council (ICC)

Gabriel Maser/Matt Sigler

- ICC is seeking out any criteria from SDOs that address hydrogen blending.

Society of Automotive Engineers (SAE)

Mike Steele

<i>Task Force</i>	<i>Document</i>	<i>*</i>	<i>Title</i>	<i>Date</i>	<i>Status</i>
Interface	J2600_201510	S	Compressed Hydrogen Surface Vehicle Fueling Connection Devices	21-Oct-15	Being revised in conjunction with ISO 17268
Interface	J2601_202005	S	Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles	29-May-20	Being revised
Interface	J2601/2_201409	TIR	Fueling Protocol for Gaseous Hydrogen Powered Heavy Duty Vehicles	24-Sep-14	Discussing Stabilization of content
Interface	J2601/3_202209	TIR	Fueling Protocol for Gaseous Hydrogen Powered Industrial Trucks	1-Nov-22	Reaffirmed
Interface	J2601/4	TIR	Ambient Temperature Refueling	21-Nov-16	Being developed. Anticipate voting on draft 1Q23.
Interface	J2601/5	TIR	MC Formula High Flow General (MCF-HF-G) <i>(title may change)</i>	1-Jul-22	Draft posted
Interface	J2719/1_112022	TIR	Application Guideline for Use of Hydrogen Quality Specification	1-Nov-22	Issued
Safety	J1766_201401	RP	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	RP	Recommended Practice for General Fuel Cell Vehicle Safety	26-Aug-14	Reaffirmation vote closes 12/13
Safety	J2579_201806	S	Standard for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles	15-Jun-18	Reaffirmation vote closes 12/13
Safety	J2594_201611	RP	Recommended Practice to Design for Recycling Proton Exchange Membrane (PEM) Fuel Cell Systems	15-Nov-16	Reaffirmation vote closes 12/13
Safety	J2990/1_201606	RP	Gaseous Hydrogen and Fuel Cell Vehicle First and Second Responder Recommended Practice	3-Jun-16	WIP - being revised

Fuel Economy	J3202	RP	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, no draft posted
Fuel Economy	J2572_201410	RP	Recommended Practice for Measuring Fuel Consumption and Range of Fuel Cell and Hybrid Fuel Cell Vehicles Fuelled by Compressed Gaseous Hydrogen	16-Oct-14	WIP

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). Working with the TC and TSC Chairs to disposition. Meeting will be planned with TSC to discuss.
HGV 5	HGV 5.1, Residential hydrogen fuelling appliances	This project is to develop a NEW standard for Residential fueling appliances. Project was kicked off in October. Content development continues.
HGV 2	HGV 2, Compressed hydrogen gas vehicle fuel containers	This project is a revision of an existing standard. The TSC is dispositioning comments and ballot to Technical Committee is being planned.
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. The document has been sent out for industry review.
HGV 4.3	HGV 4.3, Test methods for hydrogen fueling parameter evaluation	This project is a revision of an existing standard. A Task Force was put together to develop text to transition from a testing standard to a standard that can be used for certification. The TSC will proceed with this project and discuss lower boundary prior to publication.
B22734	Hydrogen generators using water electrolysis	The first edition draft is being finalized for publication. Contact Mark Duda (mark.duda@csagroup.org) with questions or for additional information.
B107	Enclosed Hydrogen Equipment	Work has begun on a new standard that will address safety requirements related to hydrogen equipment use inside an enclosure. Contact Mark Duda (mark.duda@csagroup.org) with questions or for additional information.
SPE-701	SPE-701 – Hydrogen fuel storage containers for aviation applications	The project is to develop a new document for requirements and recommendations for the material, design, manufacture, marking, and testing of serially produced, refillable hydrogen fuel storage containers intended only for the storage of compressed hydrogen gas or liquid hydrogen fuel for aviation applications. Contact Mark

Duda (mark.duda@csagroup.org) with questions or for additional information.

Compressed Gas Association (CGA)

Rob Early

Updates from last month's report are highlighted.

Status of current and future publications:

Standard	Current edition	Status
CGA G-5, <i>Hydrogen</i>	8 th (2017)	Deadline to submit proposed changes for next edition was 7/7/2022. CGA has started working on resolving the proposed changes and will issue G-5 as an ANSI standard. For updates on the work item progress see https://portal.cganet.com/WorkItem/Details.aspx?id=22-019
CGA G-5.3, <i>Commodity specification for hydrogen</i>	7 th (2017)	Deadline to submit proposed changes for next edition is 5/1/2023. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=22-013
CGA G-5.4, <i>Standard for hydrogen piping systems at user locations</i>	6 th (2019)	Deadline to submit proposed changes for next edition is 12/22/2024. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=24-54
CGA G-5.5, <i>Hydrogen vent systems</i>	3 rd (2014)	The 5 th edition has been published and can be found at https://portal.cganet.com/Publication/Details.aspx?id=G-5.5 Deadline to submit proposed changes for next edition is 03/04/2026. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=26-3 Heat radiation testing at Chart Industries in New Prague, MN date is ongoing. The goal is for the task force to review test results as soon as they are completed.
CGA G-5.6, <i>Hydrogen pipeline systems</i>	1 st (2005 – reaffirmed 2013)	Deadline to submit proposed changes for next edition is 8/1/2023. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=19-018
CGA H-3, <i>Standard for cryogenic hydrogen storage</i>	3 rd (2019)	Deadline to submit proposed changes for next edition was 12/1/2022. CGA has started the process of designating this as an ANSI standard. Please contact Rob Early at

Standard	Current edition	Status
		rearily@cganet.com if interested in joining the ANSI committee. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=23-036
CGA H-4, <i>Terminology associated with hydrogen fuel technologies</i>	3 rd (2020)	Deadline to submit proposed changes for next edition is 12/1/2024. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=24-59
ANSI/CGA H-5, <i>Standard for bulk hydrogen supply systems</i>	3 rd (2020)	The deadline to submit proposed changes for the next edition is 2/26/2024. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=24-010
CGA H-10, <i>Combustion safety for steam reformer operation</i>	2 nd (2018)	Deadline to submit proposed changes for next edition is 12/1/2023. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=23-038
CGA H-11, <i>Safe start-up and shutdown practices for steam reformers</i>	2 nd (2020)	Deadline to submit proposed changes for next edition is 8/11/2025. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=25-30
CGA H-12, <i>Mechanical integrity of syngas outlet systems</i>	1 st (2016)	Deadline to submit proposed changes for next edition is 3/1/2023. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=21-016
CGA H-13, <i>Hydrogen pressure swing adsorber (PSA) mechanical integrity requirements</i>	1 st (2017)	Deadline to submit proposed changes for next edition is 11/12/2022. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=22-027
CGA H-14, <i>HYCO plant gas leak detection and response practices</i>	1 st (2018)	Deadline to submit proposed changes for next edition is 12/8/2023. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=23-045
CGA H-15, <i>Safe catalyst handling in HYCO plants</i>	1 st (2020)	Deadline to submit proposed changes for next edition is 9/1/2025. https://portal.cganet.com/Publication/Workspace/Outline.aspx?work_id=25-59
CGA H-17, <i>Small scale hydrogen production and delivery</i>	New publication not released yet	Task force has created the first draft that is out for proposed changes; the deadline to submit proposed changes is 12/15/2022. https://portal.cganet.com/WorkItem/Details.aspx?id=18-093
CGA P-28, <i>OSHA process safety management and EPA risk management</i>	5 th (2022)	Deadline to submit proposed changes for next edition is 08/01/2027

Standard	Current edition	Status
<i>plan guidance document for bulk liquid hydrogen supply systems</i>		https://portal.cganet.com/Publication/Workspac e/Outline.aspx?work_id=25-49
CGA PS-31, <i>Position statement on cleanliness for proton exchange membranes hydrogen piping / components</i>	1 st (2007 – reaffirmed 2019)	Deadline to submit proposed changes for next edition is 6/12/2025. https://portal.cganet.com/Publication/Workspac e/Outline.aspx?work_id=25-16
CGA PS-33, <i>Position statement on the use of LPG or propane tanks as compressed hydrogen storage buffers</i>	1 st (2008 – reaffirmed 2020)	Deadline to submit proposed changes for next edition is 12/10/2026. https://portal.cganet.com/Publication/Workspac e/Outline.aspx?work_id=25-41
CGA PS-46, <i>Position statement on roofs over hydrogen storage systems</i>	1 st (2017)	Deadline to submit proposed changes for next edition is 3/6/2023. https://portal.cganet.com/Publication/Workspac e/Outline.aspx?work_id=23-012
CGA P-48, <i>Position statement on clarification of existing hydrogen setback distances and development of new hydrogen setback distances in NFPA 55</i>	1 st (2016)	Deadline to submit proposed changes for next edition was 2/12/2021. Standard is on hold until NFPA 2:2023 has been issued. For updates see the link below: https://portal.cganet.com/WorkItem/Details.aspx?id=21-062
PS-69, <i>Liquid Hydrogen Supply Systems Separation Distances</i>	1 st (2022)	CGA has developed a position statement pointing users to the new liquid hydrogen system distances that will be in NFPA 2:2023 and are not yet released. The position statement covers the process of requesting a variance to use the numbers from the NFPA 2 section of the NFPA web site. PS-69 is free for downloading at https://www.cganet.com/wp-content/uploads/PS-69_1.pdf
CGA work item 21-127, <i>Transfer and unloading of hydrogen at near-consumer use points</i>	New publication not released yet	Develop a new standard to update traditional hydrogen delivery practices for industrial users to improve practices for retail applications.
CGA work item 21-128, <i>Noise from hydrogen venting and hydrogen systems operations</i>	New publication not released yet	Develop a new standard to reduce the noise from hydrogen system operations, including venting, particularly at retail applications where hydrogen system noise is greater than ambient noise. The task force held a meeting November

Standard	Current edition	Status
		1 and is working on developing content for the publication.
CGA work item 22-107, <i>Hydrogen system best practices</i>	New publication not released yet	Develop a new standard to capture recommended best practices for handling hydrogen, filling containers, starting up systems, maintaining hydrogen systems, and similar topics to ensure safe practices for those new to the hydrogen space and to share best practices with those already experienced with hydrogen. Planned date for the first draft is March 2023.

Upcoming events:

CGA is working on a hydrogen seminar in November 2023 with support from CGA members and partners. More details and a call for papers will be out soon.

Other updates:

CGA has issued regulatory alert RA-248 about Canadian Transportation of Dangerous Goods (TDG) and international harmonization. The amendment entitled *Regulations Amending Certain Regulations Made Under the Transportation of Dangerous Goods Act, 1992 (Part 12 and International Harmonization Update)* was published in the Canada Gazette, Part 1 (CGI) on November 26, 2022 for a 75-day comment period. CGA recommends all members review a copy of this notice to determine its applicability to them.

SUMMARY: The Regulations Amending Certain Regulations Made Under the Transportation of Dangerous Goods Act, 1992 (Part 12 and International Harmonization Update) [the proposed Regulations] would incorporate changes and new requirements adopted in the 22nd edition of the United Nations Model Regulations on the Transport of Dangerous Goods (UN Recommendations) and the 2020 edition of the International Maritime Dangerous Goods Code (IMDG Code).

Associated changes to the proposed Regulations would include amendments to dangerous goods safety marks, classification information, shipping names footnote 2, and packaging requirements. The proposed Regulations would include updates to Canadian standards that are incorporated by reference, to better align with the UN Recommendations for the design, manufacture, and use of means of containment.

The proposed Regulations would also allow the use of dangerous goods safety marks prescribed under Title 49 of the United States (U.S.) Code of Federal Regulations (U.S. 49 CFR) and special permits issued in the United States for the transportation of dangerous goods across North America by road and railway vehicles.

Finally, the proposed Regulations would rewrite Part 12 of the TDGR to clarify air transportation requirements and update provisions for transport to remote locations and exemptions for medical, scientific, industrial, aerial and enforcement activities to reflect current domestic needs.

Comments may be submitted until February 9, 2023.

The CGA RA-248 can be found at

https://portal.cganet.com/Document/Details.aspx?id=15273&utm_source=Newsletter&utm_medium=email&utm_content=CGA+Regulatory+Alert+%28RA-248%29&utm_campaign=CGA+Regulatory+Alert%2C+12+5

Copies of this notice can be found in the Canada Gazette, Part I, Volume 156, Number 48.

<https://www.gazette.gc.ca/rp-pr/p1/2022/2022-11-26/html/reg3-eng.html>.

American Society for Testing & Materials (ASTM)

Jennifer Hamilton

- A potential workshop in June 2023 on hydrogen blending with natural gas.

American Society of Mechanical Engineers (ASME)

Ray Rahaman

- No updates.

VI. Discussion Topics

Facilitating Deployment

All

- No updates.

Center for Hydrogen Safety

Jennifer Hamilton

- No updates.

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 September 30, 2022:
<https://static1.squarespace.com/static/5668416ddc5cb4375e2a9ef8/t/63403c21fb0b3712e9a91c86/1665154082484/FCHEA+Regulatory+Matrix+Markup+September+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

- No updates.

California Station Implementation

Jennifer Hamilton

- No updates.

California Div. of Measurement Standards/Fuel Quality / Metrology

Christina Daniels

- No updates.

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

Juana Williams

(1) U.S. Weights and Measures Standards Development Process

All four U.S. regional weights and measures associations met this fall and considered three proposals for commercial hydrogen measurement standards. The proposals will move forward to the national level and appear on technical committee agendas. The industry proposals to modify legal metrology standards for hydrogen gas-measuring devices used to refuel vehicles are shown in the table below. At the conclusion of the January 8-11, 2023 NCWM Interim Meeting deliberations and open hearings to be held in Savannah, GA (<https://www.ncwm.com/events-detail/2023-interim-GA>) each proposal will be assigned a status. Agenda items intended for adoption during the July 2023 108th NCWM Annual Meeting must have achieved “V” voting status in January 2023.

The NCWM S&T Committee will address a single proposal to modify the 2023 edition of NIST Handbook 44 *Specifications, Tolerances, and Other Technical Requirement for Weighing and Measuring Devices*, Section 3.39. The L&R Committee will address two separate proposals to modify the 2023 edition of NIST Handbook 130 *Uniform Laws and Regulations in the Areas of Legal Metrology and Fuel Quality*, Section IV.G. All three proposals under consideration are available in entirety (submitter, justification, links to associated materials, etc.) on the NCWM website available at: [NCWM Home](#).

The proposed modifications to the hydrogen gas dispenser handbook codes are outlined in the table below:

Committee	Committee Agenda Item No. Agenda Item Title	Submitter’s Stated Purpose	Submitter’s Proposed Modification to the Code	U.S. Regional Weights and Measures Associations Findings
S&T (Specifications and Tolerances)	HGM-23.1 UR.3.8. Safety Requirement	Add safety requirement for hydrogen gas measuring devices.	Add a new user requirement paragraph UR3.8. to read: <i><u>UR 3.8 Safety Requirement – All hydrogen gas-measuring devices subject to this code shall maintain verification of testing demonstrating conformance with the latest version of SAE J2601 Fuel Protocols for Light Duty Gaseous Hydrogen Surface Vehicles, as determined by the latest version of ANSI/CSA HGV 4.3 “Test Methods for Hydrogen Fueling Parameter Evaluation.</u></i>	The proposal moves to the national level with all four regions recommending developing status. However, one regional association asks for clarification on what “verification” to SAE J2601 entails. Weights and measures regulators acknowledge that hydrogen-gas vehicle fueling is meant to occur under this safety protocol;

Committee	Committee Agenda Item No. Agenda Item Title	Submitter's Stated Purpose	Submitter's Proposed Modification to the Code	U.S. Regional Weights and Measures Associations Findings
			<i><u>(Nonretroactive as of January 1, 10XX)</u></i>	<p>however, verification of compliance to safety standard J 2601 is not a typical weights and measures function (falling outside of the scope of weights and measures regulators' responsibilities). This is a fueling safety protocol that is part of the dispenser's design, although as a user requirement the device does not have to meet type evaluation for this feature. Does the verification process typically fall under the authority of the weights and measures regulators?</p> <p>California supports the proposal and requires compliance with SAE J2601 to operate in the state and recognizes the safety protocol as a standard and a test method. California acknowledges that the design parameters for equipment must meet the standard which is not a type evaluation</p>

Committee	Committee Agenda Item No. Agenda Item Title	Submitter’s Stated Purpose	Submitter’s Proposed Modification to the Code	U.S. Regional Weights and Measures Associations Findings
				requirement as the proposal is a user requirement in the code.
L&R (Laws and Regulations)	FLR-23.3 Section 2.20. Hydrogen Fuel	Add equivalent hydrogen quality standard, ISO 14687 to 2.20.	Modify Section 2 Standard Specification 2.20 as follows: 2.20. Hydrogen Fuel. – Shall meet the latest version of SAE J2719, “Hydrogen Fuel Quality for Fuel Cell Vehicles.” or ISO 14687 “Hydrogen fuel quality — Product specification”. (Added 2012) (Amended 20XX)	The proposal, to include ISO 14687 as the alternate hydrogen fuel quality standard that shall be met as an alternate standard to SAE J2719, moved forward to the national agenda as the result of the positions taken by three of four regional weights and measures associations with the fourth providing no input at this time. Two regions recommend the proposal is ready for a vote to be adopted in July 2023 although one state noted the two standards do not always align exactly and it is possibly only part (d) of the ISO standard should be cited. While a third region recommends further development of the proposal and indicated that if the

Committee	Committee Agenda Item No. Agenda Item Title	Submitter's Stated Purpose	Submitter's Proposed Modification to the Code	U.S. Regional Weights and Measures Associations Findings
				standards are equivalent then it would be confusing to list both.
L&R	FLR-23.4 Section 4.3. Dispenser Filters	Add a filter requirement for commercial hydrogen dispensers	Modify Section 4.3.1 Engine Fuel Dispensers Filters to include a new subparagraph (c) as follows: 4.3. Dispenser Filters 4.3.1 Engine Fuel Dispensers <u>(c) All gaseous hydrogen dispensers shall have a 5 micron or smaller nominal pore-sized filter, and a filter to protect the vehicle from liquid contamination.</u> (Amended 2014 <u>and 20XX</u>)	The proposal to require hydrogen gas dispensers are equipped with a filter (5 microns or less pore size) and a filter to prevent liquid contamination moved forward to the national agenda as the result of the positions taken by three regional weights and measures association with the fourth region providing no input at this time. Three regions recommend the proposal is ready for a vote to be adopted in July 2023.

The NCWM posts documents related to each agenda item (i.e., proposal) on the NCWM Meeting Documents website available at: <https://www.ncwm.com/publication-15>.

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Comments on the proposals are encouraged up through July 2023. NIST OWM plans to prepare and submit a technical analysis of the proposals. Members on NIST sponsored USNWG on the Development of Commercial Hydrogen Measurements will also be notified of the proposals' latest status.

**VII. Open Discussion & Other Issues**

a. None.

**VIII. Next Meeting** – Wednesday, January 11<sup>th</sup> at 2:00 PM US Eastern Time