

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

**Wednesday, May 3, 2023
TIME: 2:00 PM EDT**

Minutes

**Nick Barilo
Claire Behar
Bob Davidson
Brian Ehrhart
John Eihusen
Mark Fasel
Tobias Hanson
Kelvin Hecht
Martin Hering
Laura Hill
Will James
Ian MacIntire
Sara Marxen
Norm Newhouse**

**Haboon Osmond
Ozlem Ozturk Bilal
Rino Pinti
Eric Prause
Karen Quackenbush
Spencer Quong
Amy Ryan
Matt Sigler
Mike Steele
Christine Watson
Trey White
Juana Williams
Yuk Wong
Ben Xiong**

I. Welcome and Housekeeping Items

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

II. DOE/HQ Update

Christine Watson

- DOE HFTO's Annual Merit Review is coming up soon, June 5-8, and will be a hybrid meeting. Virtual registration is free. View the [detailed meeting agenda](#) for a complete schedule of events and presentations. **Attendees for any portion of the AMR** (virtually or in-person)—including invited presenters and reviewers—must [register](#) in advance of the meeting. Highlights from the meeting program include:
 - Invited panelists from DOE and other agencies will discuss the *DOE National Clean Hydrogen Strategy and Roadmap*, interagency collaborations, and energy and environmental justice perspectives.
 - Program leads from across DOE will share their perspectives during the plenary panel, "From Hydrogen Shot to Hydrogen Hubs."
 - DOE's Hydrogen and Fuel Cell Technologies Office leads will participate in a plenary panel and will present detailed overviews at the beginning of each technical track.
 - Principal investigators will present the status and accomplishments for more than 200 projects funded by the Hydrogen Program.
 - Representatives from other agencies, including the Department of Transportation, Department of Defense, Environmental Protection Agency, and NASA, will speak on their hydrogen-related activities in a dedicated Interagency track.

- We are gathering feedback from hydrogen stakeholders on the following questions related to codes and standards. If you have responses to these questions, please email them to Laura Hill at laura.hill@ee.doe.gov.
 - Which sectors of the hydrogen supply chain have the largest gaps with regard to current codes & standards?
 - Which codes are not currently clearly adopted within existing regulations?
 - Where should R&D be focused to inform hydrogen codes & standards?
 - What are some examples of areas where streamlining of codes and standards is most needed?
 - How can government best support streamlined permitting of hydrogen deployments?

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 Phrase 2 will be voted on by WP 29 at the June meeting.

V. Codes and Standards Organization Updates

Institute of Electrical and Electronics Engineers Mark Siira

- The revision process for 2027 edition of IEEE 1547 is underway. If any members are interested in revising IEEE 1547 to allow hydrogen storage, full cell technologies, and electrolyzers to be grid connected in the process, please reach out to Karen Quackenbush via email at kquackenbush@fchea.org

International Electrotechnical Commission IEC TC 105 Kelvin Hecht

- TC 105 posted results of voting on Committee Draft for Vote:
 - IEC 62282-6-401 1st edition (*Micro fuel cell power systems – Power and data interchangeability – Performance test methods for laptop computers*)
- TC105 posted results of voting on Final Draft International Standard
 - IEC 62282-8-301 1st edition (*Energy storage systems using fuel cell modules in reverse mode – Power to methane energy systems based on solid oxide cells including reversible operation – Performance test method*)
- TC105 posted a call for nominations for the Chair of TC105.

International Standards Organization ISO/TC 197 Karen Quackenbush

- Regarding WG 22 (Gaseous hydrogen fueling station hoses), the revision work of ISO 19880-5 will stop on May 1st and start again when the CD is ready for ballot.
- WG 27 (Hydrogen fuel quality), WG 28 (Hydrogen quality control), and WG 33 (Sampling for fuel quality analysis) will meet on June 13th and 14th in Oslo, Norway.
- WG 24 (Gaseous hydrogen – Fuelling protocols for hydrogen-fuelled vehicles) will meet from June 27th to June 29th in Versailles, France.

- WG 5 (Gaseous hydrogen land vehicle refuelling connection devices) will meet on June 30th in Versailles, France as well.
- TC 197 SC 1 WG 1 (Methodology for Determining the Greenhouse Gas Emissions Associated with the Production, Conditioning and Transport of Hydrogen to Consumption Gate) will meet in Paris, France from June 26th to June 27th
- TC 197 and SC 1 Plenary will meet in Vienna, Austria, from November 13th to November 17th.
- WG 18 documents on hydrogen fuelled vehicle fuel containers and TPRDs will go to CD in the next week.

National Fire Protection Association NFPA 2

Chris LaFleur

- The 2023 edition of NFPA 2 is available. It is open for public input until January 4, 2024.
- Two ballots for technical interim amendments were passed on the following two issues:
 - Incorrect reference in a section regarding sprinkles
 - A need to clarify language in a new section of the 2023 edition regarding hydrogen balloons and unpiloted aircrafts (e.g., weather balloons)
- Additionally, in one of the technical interim amendments, there was an error in classification in the liquid hydrogen requirements section. Classified as division 1 instead of division 2.

International Codes Council (ICC)

Mark Fasel

- The Hydrogen Fuel Gas WG will meet tomorrow, May 4th from 12:00 PM – 2:00 PM US Eastern Time. The WG will meet every two weeks.

Society of Automotive Engineers (SAE)

Mike Steele

Task Force	Document	*	Title	Date	Status
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	Project opened 3/31 to Stabilize document
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
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	J2990/1_201606	RP	Gaseous Hydrogen and Fuel Cell Vehicle First and Second Responder Recommended Practice	3-Jun-16	WIP - draft posted

Safety	J3294	TIR	Guidance for material selection for use with hydrogen storage systems and components	20-Apr-23	Project initiated
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 Fueled by Compressed Gaseous Hydrogen	16-Oct-14	Needs affirmation ballot of existing content

CSA

Sara Marxen

Technical Committee Meetings		
<ul style="list-style-type: none"> • CSA Fuel Cell Standards Committee has a virtual meeting planned for May 15. • CSA Hydrogen Transportation Technical Committee has a virtual meeting planned for June 22. • CSA Group's U.S. Committee Week is planned for October 2-5 in Cleveland, Ohio. US Committee Week Details 		
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 ballot comments. Meetings planned for 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. Ballot to Technical Committee will close May 5, 2023.
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. Expect to ballot Technical Committee in May 2023.
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.
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)	The ANS committee has resolved all propose changes, and the update is moving through the ANSI review process. 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 was 5/1/2023. A total of 7 PCs have been submitted. The next step is to resolve the PCs. 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

Standard	Current edition	Status
		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)	The ANS consensus body finished resolving PCs on 28 February 2023. Members who did not attend the final meeting were given 2 weeks to vote, concluding on 17 March 2023. This publication is now in staff review prior to Council Ballot.
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. However, all the content has been added to the updated version of CGA G-5. Once CGA G-5 has been issued, CGA H-4 will be retired. For updates use the following link: 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 6/1/2023. 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 was 11/12/2022. Publication is in staff review. 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

Standard	Current edition	Status
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 was 12/15/2022. Publication is in final staff review. https://portal.cganet.com/WorkItem/Details.aspx?id=18-093
CGA P-28, <i>OSHA process safety management and EPA risk management plan guidance document for bulk liquid hydrogen supply systems</i>	5 th (2022)	Deadline to submit proposed changes for next edition is 08/01/2027. https://portal.cganet.com/Publication/Workspace/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/Workspace/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/Workspace/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/Workspace/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 has been on hold until NFPA 2:2023 has been issued. Now that NFPA 2:2023 has been issued, work will restart on updates to PS-48 to point to NFPA 2 for hydrogen. The ad hoc committee will meet to resolve the changes and move the updated version along for publication. For updates see the link below: https://portal.cganet.com/WorkItem/Details.aspx?id=21-062

Standard	Current edition	Status
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 in NFPA 2:2023. 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 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. The first draft is being prepared for a two-month membership review. Links to the review copy will be posted once the process starts.
CGA work item 22-116, <i>Hydrogen separation distances</i>	New publication not released yet	CGA is developing a globally harmonized standard on the methodology for developing separation distances between hydrogen systems and exposures. The standard will provide details on mitigation techniques for reducing required distances, particularly in near-consumer locations (such as vehicular fueling) where room is limited. The JWG met on 5 April 2023. The JWG will meet again on 4 May 2023, 18 May 2023, and 8 June 2023.

Standard	Current edition	Status
CGA work item 22-127, <i>Hydrogen education plan</i>	New publication not released yet	CGA is developing a globally harmonized standard on hydrogen emergency response and safe hydrogen handling training. The JWG met on 17 April 2023 and will meet again on 11 May 2023 and 8 June 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.

CGA has established a new hydrogen membership category for those interested in hydrogen activities and not the whole range of industrial gases. The new membership category has a lower fee structure. More details can be found at <https://www.cganet.com/cga-announces-formation-of-hydrogen-membership/>. Those who are interested are encouraged to review the material at the CGA web site and/or contact Rob Early at rearly@cganet.com.

CGA has launched <https://www.safehydrogenproject.org/> to grow awareness and access to standards and safety information. More details can be found at <https://www.cganet.com/compressed-gas-association-announces-landmark-hydrogen-initiative/>

American Society for Testing & Materials (ASTM)

Christina Daniels

- No updates.

American Society of Mechanical Engineers (ASME)

Ray Rahaman

- Concerning the current update on B31.12, the committee is currently voting in a few new members and their document is still out on public review which closes on May 24, 2023.
- The B31.12 European International Working Group is currently putting together new proposals to review the next edition of the code once it is released. The committee's last meeting was on March 21, 2023 and they will be looking to meet again in the fall possibly in September 2023.
- ASME BPVC Section VIII committee determined cell stack assemblies should fall within their scope and working on mandatory appendix for their 2027 edition.
- The proposal for the appendix excludes everything between the end plates. The idea is to require the ASME stamp on end plates which include restrictions on materials.

VI. Discussion Topics

Center for Hydrogen Safety

Jennifer Hamilton

- Past webinar: Gaseous Hydrogen: Safety Considerations
<https://www.aiche.org/ili/academy/webinars/gaseous-hydrogen-safety-considerations>

- The CHS Europe conference will be held in Rotterdam, Netherlands, May 9-11, 2023.

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 March 31, 2023:
<https://static1.squarespace.com/static/5668416ddc5cb4375e2a9ef8/t/644fef62e193f84980dd8d63/1682960227050/FCHEA+Regulatory+Matrix+Markup+March+31+2023.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

Ben Xiong

- 57 open retail stations
- 43 stations in development
- 6 HRS currently unavailable
 - True Zero LAX, Palo Alto, Anaheim
 - Shell Citrus Heights
 - Cummins Ontario
 - Cal State LA
- 6 HRS in commissioning
 - Iwatani Anaheim
 - Iwatani Corona
 - Iwatani La Mirada
 - Iwatani Santa Ana
 - True Zero San Diego – Mission Center
 - HTEC Woodside

California Div. of Measurement Standards/Fuel Quality / Metrology

Yuk Wong

- They continue to perform hydrogen quality sampling and analysis testing throughout the state.
- Particulate sampling has been put on hold. Samplers sent back to manufacturer for retrofit. Looking at beginning particulate sampling by late June or early July with Standard
- Operating Procedure and staff training in place.

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

- U.S. Weights and Measures Standards Development Process
 - The final 2023 Interim Meeting Reports (National Conference on Weights and Measures (NCWM) Publication 16) on the status and points considered January 8-11, 2023 by the NCWM Committees that addressed the proposals to modify hydrogen gas commercial measurement standards were published mid-April 2023 and made available on the NCWM website at: <https://www.ncwm.com/publication-16>. Proposals assigned a “Voting” status will

be up for adoption during the July 30 - August 5, 2023 108th NCWM Annual Meeting in Norfolk, VA.

- o An abbreviated report on those hydrogen proposals is listed in the table below:

NCWM Committee	Committee Agenda Item Status, No., Title	Submitter's Stated Purpose	Proposed Modification to the NIST Handbook Code	NCWM Agenda Item Status
Specifications and Tolerances (S&T)	<p>Developing HGM-23.1</p> <p>UR.3.8. Safety Requirement</p>	<p>Add safety requirement for hydrogen gas measuring devices to NIST Handbook 44 Section 3.39.</p>	<p>Add a new user requirement paragraph UR. 3.8. to read:</p> <p><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. (Nonretroactive as of January 1, 20XX)</u></p>	<p>The Committee made this proposal a developing item requesting additional information on the proposed new safety requirement.</p> <p>NIST Handbook 44 includes legal metrology requirements and does not include safety requirements. California has indicated SAE J2601 is more than a safety requirement because it is also a performance requirement applied to its public stations. The submitter has indicated the dispenser’s fueling protocol can harm test equipment. The Submitter acknowledges that handbooks do not address safety and requested informational status and that the proposal undergo further development.</p> <p>The S&T Committee has requested more information on the metrological effects of the fueling protocol on hydrogen gas vehicle fueling dispensers.</p> <p>On review of these comments the</p>

NCWM Committee	Committee Agenda Item Status, No., Title	Submitter's Stated Purpose	Proposed Modification to the NIST Handbook Code	NCWM Agenda Item Status
				Committee assigned the proposal "Developing" status.
Laws and Regulations (L&R)	<p>Developing FLR-23.3</p> <p>Section 2.20. Hydrogen Fuel</p>	Add equivalent hydrogen quality standard, ISO 14687 to NIST Handbook 130 Part IV. F. Section 2.20.	<p>Modify Section 2 Standard Specification 2.20 as follows:</p> <p>2.20. Hydrogen Fuel. – Shall meet the latest version of SAE J2719, "Hydrogen Fuel Quality for Fuel Cell Vehicles." <u>or ISO 14687 "Hydrogen fuel quality — Product specification"</u>. (Added 2012) <u>(Amended 20XX)</u></p>	<p>Recommended for further development by the submitter of the proposal.</p> <p>Comments were heard recommending the fuel quality standard include the publication dates for each standard and to specifically cite the relevant part of ISO 14687 which applies for this standard. Additionally, there could be a six-month gap in the revision cycle before the two standards would be completely aligned.</p> <p>Based on these points the Committee agreed there remains concern about the confusion that would result from citing two fuel quality standards instead of one.</p> <p>On review of these comments the Committee assigned the proposal "Developing" status and requested the submitter determine the standard which will resolve these issues.</p>
L&R	<p>Voting FLR-23.4</p>		Modify Section 4.3.1 Engine Fuel	Recommended for adoption in July 2023.

NCWM Committee	Committee Agenda Item Status, No., Title	Submitter's Stated Purpose	Proposed Modification to the NIST Handbook Code	NCWM Agenda Item Status
	Section 4.3. Dispenser Filters	Add filter requirements for commercial hydrogen dispensers to NIST Handbook 130 Part IV. F. Section 4.3.	Dispensers Filters to include a new subparagraph (c) as follows: 4.3. Dispenser Filters <u>4.3.3 Delivery Gas of Hydrogen</u> <u>(a) All gaseous hydrogen dispensers shall have a 5 micron or smaller nominal pore-sized filter, and</u> <u>(b) Shall be fitted with a coalescing filter that is size appropriate to the dispensing system to protect the vehicle from liquid contamination.</u> <u>(Added 20XX)</u>	The Committee agreed to the submitter's further modification of the proposal in response to comments indicating the proposed regulation did not address critical filter specifications for the contaminant filter pore size nor specify a type and filter sized appropriately for protecting the vehicle systems from liquid contaminants. The Committee also concurred with recommendations for revising the proposal to include filter size and type and placing the filter requirements in separate new subsections 4.3.3. Delivery of Hydrogen Gas (a) and (b).

- The NCWM Specifications and Tolerances Committee and Laws and Regulations Committee addressing the proposals for hydrogen including a hydrogen dispenser fueling safety protocol for NIST Handbook (HB) 44 and recognizing a second hydrogen fuel quality standard and filter requirements (i.e., for particulates & liquids) in NIST HB 130 have requested further input on the safety and fuel quality agenda items. Input can be sent to NCWM S&T Committee Chair: Mr. Jason Glass (KY) available by email at: jason.glass@ky.gov and L&R Committee Chair Mr. Doug Rathbun (IL) available by email at: doug.rathbun@illinois.gov.
- Comments on these proposals are encouraged and can be provided in-person during open hearings in the May 2023 regional weights and measures associations meetings or to the chairperson up through the July 30 - August 5, 2023 NCWM Annual Meeting in Norfolk, VA. Committee contact and meeting information for upcoming regional events in the weights and measures community are listed below:

- The May 8-11, 2023 NEWMA Annual Meeting in Saratoga Springs, NY: The latest information on NEWMA is on the NCWM website available at : <https://newma.us/page-1075191> and NEWMA committees at: <https://newma.us/Specifications-and-Tolerances-Committee> or <https://newma.us/Laws-and-Regulations-Committee>.
- The May 15-18, 2023 CWMA Annual Meeting in Grand Rapids, MI: The latest information on CWMA is on the NCWM website available at: (<https://cwma.net/event-4911389>) and CWMA committees at: <https://cwma.net/page-1075182> (S&T Cmte.) or <https://cwma.net/page-1075179> (L&R Cmte.).
- If you have questions or comments regarding the USNWG or NIST OWM's work on hydrogen projects in the areas of device standards, test procedures, or hydrogen fuel specifications, please contact Juana Williams by email at: juana.williams@nist.gov or by telephone at (301) 975-3989.

VII. Open Discussion & Other Issues

- a. None.

VIII. Next Meeting – Wednesday, June 14th at 2:00 PM US Eastern Time