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

Wednesday, September 11, 2024
TIME: 2:00 – 3:00 pm (Eastern Standard Time)

Minutes

Attendees

Connor Dolan	**Susan Cathey**	**Sara Marxen**
Juana Williams	**Jennifer Gangi**	**Jitesh P.**
Kelvin Hecht	**Ian McIntire**	**Mike Force**
Norm Newhouse	**Lisa Yang**	**Adnrew Adkins**
Christine Watson	**Tobias Hanson**	
Karen Quackenbush	**Amy Ryan**	

I. Welcome and Housekeeping Items

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

II. DOE/HQ Update — Susan Cathey / Christine Watson

The U.S. Department of Energy (DOE) announced nearly $62 million for 20 projects across 15 states to accelerate the research, development, demonstration, and deployment of next-generation clean hydrogen technologies. These projects will advance critical elements of hydrogen fueling infrastructure, develop and demonstrate hydrogen-powered container-handling equipment for use at ports, and improve processes essential to the efficient, timely, and equitable deployment of hydrogen technologies. Among the selected projects are innovative, first-of-a-kind efforts to improve community engagement and ensure the benefits of the clean energy revolution are felt by all Americans. DOE's Hydrogen and Fuel Cell Technologies Office (HFTO) will manage the selected projects, which span the following five topic areas:

- **Components for Hydrogen Fueling of Medium- and Heavy-Duty (MD/HD) Vehicles (four projects, $8.5 million).** Selected projects will develop advanced components to enable gaseous and liquid hydrogen fueling for medium- and heavy-duty hydrogen-powered vehicles.

- **Standardized Hydrogen Refueling Station of the Future (four projects, $40 million).** Selected projects will develop and demonstrate a low-cost, standardized, and replicable advanced "hydrogen fueling station of the future"—one that can meet the needs of commercial-scale MD/HD truck fueling.

- **Hydrogen Fuel Cell-Powered Port Equipment (one project, $2.5 million).** Selected project will design, develop, and demonstrate a hydrogen fuel cell "top loader" (for handling containers) and a mobile refueler at the Port of Oakland.

- **Enabling Permitting and Safety for Hydrogen Deployment (seven projects, $7 million).** Selected projects will identify the primary challenges to siting, permitting, and installation across the value chain from hydrogen production through end-use, and explore opportunities to address them.

- **Equitable Hydrogen Technology Community Engagement (four projects, $4 million).** Selected projects will improve the capacity of DOE and DOE-funded projects to conduct effective community-engagement activities. With funding from HFTO and DOE's Office of Fossil Energy and Carbon Management, these projects will engage directly with disadvantaged communities to help DOE gain a better understanding of their concerns and provide them with important information about hydrogen and related technologies, as well as develop lessons learned and best practices on Community Benefits Plans.

Interested in becoming an expert trainer for Argonne National Library's **Research & Development Greenhouse gases, Regulated Emissions, and Energy use in Technologies** (R&D GREET) Model? The new R&D GREET Train-the-Trainer program aims to educate new users on how to use the tool to expand the accessibility of research and development in the transportation and energy sectors. **Apply by September 23.**

Hydrogen Shot Fellow: The U.S. Department of Energy (DOE) is looking for talented, bright, early career professionals to partner with DOE Hydrogen Program Managers working to achieve the Hydrogen Energy Earthshot goal of $1 per 1 kilogram in 1 decade ("1 1 1"). The Safety Codes and Standards Team is looking for a fellow with a specific background in electrolysis, but would welcome applications from any relevant technical background. **Apply at: www.zintellect.com Keyword: Hydrogen Shot**

DOE Issued Notice of Intent for Funding to Advance Hydrogen and Fuel Cell Technologies to Drive National Decarbonization. Potential topic areas include:

- **Photoelectrochemical (PEC) Water Splitting Device Scale Up** will develop and demonstrate PEC water splitting devices using low-cost, scalable synthesis and fabrication techniques.
- **High-Performance Materials for Hydrogen Service, Including Cryogenic and/or High-Pressure Conditions** will develop advanced materials for use in high-pressure hydrogen storage tanks, cryogenic service conditions, and fiber reinforced polymer hydrogen pipelines.
- **Sustainable High-Temperature Proton Exchange Membranes and Ionomers for Heavy-Duty Transportation Applications** will develop membranes and ionomers (key components of fuel cells) suitable for high temperature operation (up to 120°C) in heavy-duty fuel cell applications, without the use of perfluorosulfonic acid.
- **Domestic Hydrogen Fuel Cell Electric Motorcoach Bus Development and Demonstration** will develop and demonstrate domestically produced fuel cell electric motorcoach buses suitable for long-haul service.

As a follow up to the webinar held on August 29, DOE is seeking feedback on the pipeline permitting process. Please feel free to provide input via the questionnaire here, and/or amplify the questionnaire with other stakeholders: August H2IQ Hour: Regulation and Permitting of H2 and Natural Gas Pipelines Questionnaire (office.com). Feedback by 09/14 would be appreciated, but the questionnaire will remain open all month. Recordings and slides from webinars are posted 10 business days after the webinar and should be available soon.

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

https://static1.squarespace.com/static/5668416ddc5cb4375e2a9ef8/t/64a5c9213a13167fb28acb40/1688586529543/FCHEA+Regulatory+Matrix+Markup+June+30+2023.pdf

Matrix: Newest edition (June 30, 2024) is now available for review. It uses redline/strikeout to depict progress over the last quarter. If you identify information in need of updating or have questions about any of the activities, please contact kquackenbush@fchea.org.

IV. Global Technical Regulations **Ian MacIntire**

Working on the final rule for the 2024 regulatory agenda for fuel cell vehicles. The agenda is listed for November, but it is not set in stone.

V. Codes and Standards Organization Updates

Institute of Electrical and Electronics Engineers **Mark Siira**

None at this time.

International Electrotechnical Commission IEC TC 105 **Kelvin Hecht**

New Convenors

- Micro Fuel Cell Power Systems - Fuel cartridge interchangeability
  - Mr. Seung Hoon Lee – Approved
- Micro Fuel Cell Power Systems – Power & Data Interchangeability
  - Mr. Jounpyo Shim – Approved
- Ad Hoc: Performance test methods of Trigeneration Fuel Cell Systems
  - Mr. Sangjin Moon – Approved
- **Stationary Fuel Cell Power Systems – Safety**
  - **Requests for new convenor.** If any representatives from the US/North America are interested, please contact Kelvin for more information.

Next Plenary Meeting - Outside London, September 23-27

International Standards Organization ISO/TC 197 **Karen Quackenbush / Sara Marxen**

TC 197 & TC 197/SC 1 Plenary Meetings – The annual meeting for the TC and SC are planned for December 9-13 in Seoul, Korea. The US TAGs will manage registration. The schedule for the week:

Day / Time (local KST)	**Committee**
Monday • Dec 9	
9 – 12	TC 197/WG 37, *Gaseous hydrogen – Fueling stations – Mobile fueling stations*

9 – 5	TC 197/WG 15, *Cylinders and tubes for stationary storage*
1 – 5	TC 197/WG 31, *O-rings*
1 – 5	SC 1/AHG 2, *H_2 and high H_2 content blends pipelines*
Tuesday • Dec 10	
9 – 12	TC 197/WG 22, *Gaseous hydrogen fueling station hoses*
9 – 12	TC 197/WG 19, *Gaseous hydrogen fueling station dispensers*
9 – 12	SC 1/WG 2, *Aerial vehicle liquid hydrogen fuel storage system*
1 – 5	Strategic Planning Meeting
6 – ?	Appreciation Dinner
Wednesday • Dec 11	
9 – 5	SC 1 Plenary Meeting
Thursday • Dec 12	
9 – 5	TC 197 Plenary Meeting
Friday • Dec 13	
9 – 12	TC 197 Plenary Meeting
1 – ?	Optional Technical Tour (location TBC)

Updates on other ISO activities:
The informal exploration of ISO/TC 197 future structure continues, as experts from interested countries meet virtually to explore potential structures. The activity is led by Jay Keller (US), with support from Richard Trott (DE).

TC 197/WG 5, *Gaseous hydrogen land vehicle refuelling connection devices* – WG continues to meet to address comments on ISO/DIS 17268-1 (Flow capacities up to and including 120 g/s) and ISO/WD 17268-2 (Flow capacities greater than 120 g/s). ISO 17268-1 completed DIS Ballot and WG is addressing comments. Continued work on the 17268-2 document is focused on High Flow Receptacle Proposals and determining KPIs for receptable profile selection. The WG has been meeting every two weeks. The next virtual meeting will be held September 18th.

TC/197/WG 15, *Cylinders and tubes for stationary storage* – WG next meeting is planned for September 26.

TC 197/WG 18, *Gaseous hydrogen land vehicle fuel tanks and TPRDs* – WG has finalized comments on ISO/DIS 19881 (tanks) and ISO/DIS 19882 (TPRDs). The 19882 FDIS has been submitted to ISO. The 19881 FDIS is being finalized and will be submitted shortly.

TC 197/WG 24, *Gaseous hydrogen – Fueling protocols for hydrogen-fuelled vehicles* – WG activity for HD fueling protocols document (ISO /CD 19885-3) is moving forward to gain consensus on protocols for inclusion in the document. Virtual meetings are planned for September 23 and October 8. A Hybrid meeting at Toyota in Gardena, CA is planned for November 19-20 (co-located with WG 38 on November 20-21).

TC 197/WG 29, *Basic considerations for hydrogen safety* – WG met in July to review comments from previous ballot/comment periods on the TR 15916. The next edition will be a Technical Specification (currently 15916 is a Technical Report). The next meeting is planned for October 10.

TC 197/WG 34, *Hydrogen generators using water electrolysis test protocols and safety requirements* – WG is meeting frequently to address DIS comments, as it works to revise requirements for electrolyzers. The work has been split up into three related activities, as reported previously. WG 34 is developing requirements for ISO DIS 22734-1: *Hydrogen generators using water el*ectrolysis *— Part 1: General requirements, test protocols and safety requirements.* WG next meeting is planned for October 8.

TC 197/WG 35, *Liquid hydrogen land vehicle fueling protocol* – WG next meetings are planned for October 2 and October 29.

TC 197/WG 36, *Gaseous hydrogen land vehicle refuelling connection devices – Cryo-compressed H_2 gas* – WG next meeting is planned for September 18.

TC 197/WG 38, *Gaseous hydrogen – Fueling protocols for hydrogen-fuelled vehicles: communications between the vehicle and dispenser control systems* – WG activity for HD fueling protocols document (ISO/CD 19885-2) moving forward. Three task forces have been established to help with the work:

1) Fueling Protocol Implementation
2) Technology Evaluation Matrix
3) Cyber Security

Virtual meetings are planned for September 24, October 15 and January 16, 2025. A hybrid meeting at Toyota in Gardena, CA is planned for November 20-21 (co-located with WG 24 on November 19-20). This is a newer WG so members are encouraged to join through the NSB (for USA, reach out to CGA).

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* – WG continues to meet to convert TS 19870 into a multi-part series of International Standards starting with 19870-1, Emissions associated with the production of hydrogen up to production gate. A hybrid meeting is planned for October 28-30 in Korea.

National Fire Protection Association NFPA 2 **Chris LaFleur**

None at this time.

International Code Council (ICC) **Mark Fasel**

2024 International Code Council Annual Conference, Expo, and Hearings will be held in Long Beach, California. https://www.iccsafe.org/events/conference/welcome/

- Conference October 20 – 23
- Expo October 20-21
- Committee Action Hearings October 23 - 31

Code Development Activity – The Code Council's Committee Action Hearings for the development of the 2027 International Codes will occur October 23rd – October 31st at Long Beach Convention Center 300 E Ocean Blvd. Long Beach, California. The International Fuel Gas Code and the International Fire Code both had proposed revisions related to Hydrogen and/or references to NFPA 2.

The Committee Action Hearings #2 Agenda and Monograph will be posted for public review on CDP Access September 5th, 2024. To view public comments, you must first create a user profile.

Here is a link to CDP Access: https://www.cdpaccess.com/

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. New sponsor required to move forward.
Interface	J2601_202005	S	Fueling Protocols for Light Duty Gaseous Hydrogen Surface Vehicles	29-May-20	Being revised
Interface	J2601/4	TIR	Ambient Temperature Variable and Fixed Orifice Fueling Protocol for Light Duty Gaseous Hydrogen Surface Vehicles	21-Nov-16	At MVC for final approval
Interface	J2601/5_202402	TIR	High-Flow Prescriptive Fueling Protocols for Gaseous Hydrogen Powered Medium and Heavy-Duty Vehicles	1-Feb-24	Being revised to current engineering.
Interface	J2799_202406	S	Hydrogen Surface Vehicle to Station Communications Hardware and Software	1-Jun-24	Document opened to provide corrections and clarifications.
Safety	J1766_201401	RP	Recommended Practice for Electric, Fuel Cell and Hybrid Electric Vehicle Crash Integrity Testing	10-Jan-14	Revised - Action required.
Safety	J2990/1_201606	RP	Gaseous Hydrogen and Fuel Cell Vehicle First and Second Responder Recommended Practice	3-Jun-16	Voting closed. Comments need to be addressed. Follow up required.
Safety	J3294	TIR	Guidance for Material Selection for use in Hydrogen Systems	20-Apr-23	Soliciting comments

When WG 24 / 38 have their meeting in LA in November 19 – 21, there will be an SAE meeting in person that the Japanese have requested on the protocol issues the following day.

CSA **Sara Marxen**

Technical Committee Meetings

- If you are interested in joining the Hydrogen Transportation Technical Committee (H2TTC) or the Fuel Cell Technical Committee (FCTC), please contact Mark Duda (mark.duda@csagroup.org) or Sara Marxen (sara.marxen@csagroup.org).
- We are actively recruiting Gas Suppliers (GS) and User Interest (UI) category members for the H2TTC, and Regulators and UI representative for the FCTC. If you or someone you know is interested, please reach out to Mark or Sara.

- CSA US. Committee Week is planned for October 21-25 in Philadelphia. To view the 2024 CSA Committee Week program 2024 US Committee Week Program. To access the registration page: CSA Group US Committee Week Registration. Virtual participation will be offered.

Active Projects	
Designation/Title	**Status**
HGV 4.1, Hydrogen fueling dispensers	This project is to revise the existing edition of HGV 4.1 to consider medium and heavy-duty fueling, as well as liquid and cryo-compressed. The project kickoff meeting is planned for October 21 (morning).
HGV 4.9, Hydrogen fueling stations	This project is to revise the existing edition of HGV 4.9 to address updates in technology and coordinate requirements with HGV 4.1 and HGV 4.3, as applicable. The project kickoff meeting is planned for October 21 (afternoon).
TS 5.3, Portable and mobile fueling systems	This project is to develop a new guidance document. The next meeting is planned for October 23.
CHMC 1, Test methods for evaluating material compatibility in compressed hydrogen applications - Metals	This project is to revise the existing edition of CHMC 1 to address updates in testing methods and clarify requirements. Content development continues with monthly meetings. Please contact Sara if interested in joining this work.
TS 4.3.5, Test methods for high flow hydrogen fuelling parameter evaluation	This project is to coordinate with the recent release of SAE TIR J2601/5, *High-Flow Prescriptive Fueling Protocols for Gaseous Hydrogen Powered Medium and Heavy-Duty Vehicles*. CSA will develop a Technical Specification for verification to the SAE protocol.
B107, Enclosed Hydrogen Equipment	This project is to develop a new standard that will address safety requirements related to hydrogen equipment use inside an enclosure. The document is currently being balloted to the FCTC. Expected to publish in October 2024.
B401.3, Hydrogen vehicle and trailer maintenance facilities code	This project is a new Canadian code that will be aligned with existing maintenance facility requirements in CSA B401.1 (natural gas) and existing hydrogen requirements – BNQ 1784-000 and NFPA 2 and 30A. Please contact Julie Cairns (julie.cairns@csagroup.org) if interested in joining this work.
FC 62282-2-100 * C22.2 No. 62282-2-100, Fuel cell/water electrolysis module	The committee continues to meet to adopt IEC 62282-2-100 - *Fuel Cell Technologies – Part 2-100: Fuel cell modules – Safety* for US and Canada and expanding the scope of the adoption to include water electrolysis modules. Contact Mark for additional information.

Compressed Gas Association (CGA) **Rob Early**

None at this time.

American Society for Testing & Materials (ASTM) **Chrstina Daniels**

Standard Number	Title	Status	Year

D7606	Standard Practice for Sampling of High Pressure Hydrogen and Related Fuel Cell Feed Gases	Published 2024-06	2024
D7634	Standard Test Method for Visualizing Particulate Sizes and Morphology of Particles Contained in Hydrogen Fuel by Microscopy	Subcommittee Ballot 2024-06	2017
D7650	Standard Practice for Sampling of Particulate Matter in High Pressure Gaseous Fuels with an In-Stream Filter	Current	2021
D7651	Standard Test Method for Gravimetric Measurement of Particulate Concentration of Hydrogen Fuel	Current	2024
D7653	Standard Test Method for Determination of Trace Gaseous Contaminants in Hydrogen Fuel by Fourier Transform Infrared (FTIR) Spectroscopy	Published 2024-06	2024
D7675	Standard Test Method for Determination of Total Hydrocarbons in Hydrogen by FID-Based Total Hydrocarbon (THC) Analyzer	Current	2022
D7676	Standard Practice for Screening Organic Halides Contained in Hydrogen or Other Gaseous Fuels	Current	2023
D7892	Standard Test Method for Determination of Total Organic Halides, Total Non-Methane Hydrocarbons, and Formaldehyde in Hydrogen Fuel by Gas Chromatography/Mass Spectrometry	Subcommittee Ballot 2024-06	2022
D7941/D7941M	Standard Test Method for Hydrogen Purity Analysis Using a Continuous Wave Cavity Ring-Down Spectroscopy Analyzer	Current	2023
NEW	Standard Test Method for Determination of Inorganic Halogenated Compounds and Formic Acid in Hydrogen by Ion Chromatography	Proposal submitted	NEW
NEW	Standard Test Method for Standard Test Method for Permanent Gases in Hydrogen Fuel by Gas Chromatography and Pulse Discharge Helium Ionization Detector (GC/PDHID)	Proposal submitted	NEW
NEW	Standard Test Method for Determination of Trace Sulfur Compounds in Hydrogen Fuel by Thermal Desorption Gas Chromatography and Sulfur Chemiluminescence Detection (TD/GC/SCD)	Proposal submitted	NEW

American Society of Mechanical Engineers (ASME) **Ray Rahaman / Matt Vazquez**

None at this time.

VI. Discussion Topics

Center for Hydrogen Safety — **Jennifer Hamilton**

Open now through October is nominations for hydrogen excellence award. Details are available here: https://www.aiche.org/chs/robertzaloshaward

California Station Implementation — **Ben Xiong**

None at time.

California Div. of Measurement Standards/Fuel Quality / Metrology — **Yuk Wong / Andrew Adkins**

No new updates since last month. Particulate Sampling is currently down and will resume once fixed.

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

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

This report provides an overview of 2025 proposals to modify legal metrology standards for hydrogen gas-measuring devices and hydrogen blended with natural gas when used to refuel vehicles. These items were carried over to the 2025 regional and national technical committees' agendas. The final report on agenda items determined during the 109th National Council on Weights and Measures (NCWM) [note name change] July 14-18, 2024 Annual Meeting held in Cleveland, Ohio will not be available until October 2024. The regional and NCWM Specifications and Tolerances (S&T) Committees will continue to address a proposal to include a device owner safety requirement in NIST Handbook 44 *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, Section 3.39. The regional and NCWM Laws and Regulations (L&R) Committees will continue to address a carryover fuel grade labeling standard proposal to modify NIST Handbook 130 *Uniform Laws and Regulations in the Areas of Legal Metrology and Fuel Quality*, Section IV. Uniform Regulations F. Uniform Fuels and Automotive Lubricants Regulation Section 3. Each proposal in entirety (submitter, justification, links to associated materials, etc.) is available on the NCWM website under the meeting documents for the four U.S. regional weights and measures associations at: https://www.ncwm.com/meetings.

NCWM Committee	Agenda Item Status/ Agenda Item No./Agenda Item Title	Submitter's Stated Purpose	Submitter's Proposed Modification to the Code	NCWM Agenda Item Status
S&T	**Developing** HGM-23.1	Add safety requirement for hydrogen gas measuring devices	Add a new nonretroactive user requirement paragraph UR.3.8. to read:	The NCWM assigned developing status to the proposal while it continues to await a

NCWM Committee	Agenda Item Status/ Agenda Item No./Agenda Item Title	Submitter's Stated Purpose	Submitter's Proposed Modification to the Code	NCWM Agenda Item Status
	UR.3.8. Safety Requirement [This is the third year the proposal is being considered]	to NIST Handbook 44 Section 3.39.	***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)***	report on data being collected by CARB and CADMS that demonstrates how verification of gaseous hydrogen vehicle refueling systems to safety protocol (SAE J2601) is also relevant to the NIST Handbook 44 device performance requirements for the equipment's metrological parameters.
L&R	**Assigned to NCWM FALS** Item Block 2 (B2): FLR-24.1 B2: FLR-24.1 3.11.2.1.X. Identification of Grade and 3.12.2.X Identification of Grade [This is the second year the proposal is being considered]	Amend NIST Handbook 130 Part IV. Uniform Regulations F. Uniform Fuels and Automotive Lubricants Regulation Section 3 Classification and Labeling for Sale to include under 3.11 CNG and 3.12 LNG regulations for labeling of grades to the method of sale for CNG and LNG.	ASTM Committee D03 recognizes two newer fuel quality specifications for natural gas vehicle fuels which were adopted by the NCWM in July 2024. Modify these natural gas requirements to require labeling of fuel grades listed in the recently adopted ASTM standards. Add new subsections to HB 130 Part IV. F. Section 3. Classifications and Labeling for Sale under Subsections 3.11 Compressed Natural Gas (CNG) and 3.12 Liquefied Natural Gas (LNG) as follows: **3.11.2.1.X. Identification of Grade. – Each retail dispenser of CNG shall be labeled with an identification of the grade of the product.**	During the July 2024 NCWM Annual Meeting the NIST HB 130 proposal to address the ASTM D8080 and D8487 fuel quality standards was split into two parts as a separate voting item from the fuel grade labeling proposal. The ASTM fuel quality standards were adopted to replace SAE natural gas standards. The proposal requiring the identification of the fuel grade was downgraded for further review by the NCWM L&R Committee's Fuels and Lubricants Subcommittee (FALS) to ensure proper reference to grade designations identified in the ASTM standards. The fuel grade labeling part of the proposal was designated a

NCWM Committee	Agenda Item Status/ Agenda Item No./Agenda Item Title	Submitter's Stated Purpose	Submitter's Proposed Modification to the Code	NCWM Agenda Item Status
			3.12.2.2.X. Identification of Grade. – Each retail dispenser of LNG shall be labeled with an identification of the grade of the product.	carryover item for the 2025 agenda.

The schedule for the upcoming meetings of the four U.S. regional weights and measures associations and NCWM Specifications and Tolerances Committee and Laws and Regulations Committee addressing proposals for hydrogen codes and regulations during the 2025 Weights and Measures Standards Development Cycle (AUG2024-JUL2025) are shown below. Current editions of the 2024 NIST Handbooks are available on the NIST OWM website at: https://www.nist.gov/pml/owm/nist-handbooks. The 2025 editions of the handbooks are currently under review for publication later this year.

Comments on the 2025 proposals are encouraged and can be provided in-person (by registered attendees), in writing, or electronically to the chairperson of the Committee addressing these proposals regionally and/or nationally up through the January 14, 2025 open hearing sessions during the NCWM Interim Meeting in Charleston, SC.

U.S. Regional Weights and Measures Association Meetings

WWMA Annual Meeting | September 8 – 12, 2024 | Las Cruces, New Mexico
SWMA Annual Meeting | October 6 – 11, 2024 | San Antonio, Texas
NEWMA Interim Meeting | October 21 – 23, 2024 | Norwich, Connecticut
CWMA Interim Meeting | October 28 – 31, 2024 | Dubuque, Iowa

2025 NCWM Interim Meeting (https://www.ncwm.com/)

2025 NCWM Interim Meeting | January 12 - 15, 2025 | Charleston, South Carolina

If you have questions or comments regarding these handbook proposals, the NIST 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.

(2) NIST July 2024 Draft Examination Procedure Outline 29 for Hydrogen Gas Retail Vehicle Fuel Dispensers Under U.S. National Work Group Review

The U.S. National Work Group (USNWG) on the Development of Commercial Hydrogen Measurement Standards was balloted on July 2024 revisions to the September 2017 version of Examination Procedure Outline (EPO) Number 29 for Hydrogen Gas Retail Vehicle Fuel

Dispensers and a corresponding new test report form. Thank you to those who provided input on the draft.

EPO 29 was revised to include a new table format, standardized text (security, monetary computations, etc.) applicable to handbook vehicle fueling dispenser requirements, code modifications since 2017, more safety information, and a new test report form adaptable for either hardcopy or electronic format. The examples in the EPO's Appendix for the Reference Scale Selection Criteria were modified to reflect the current acceptance tolerance of 5.0 %. Therefore, any scale selected that was suitable for tests where the acceptance tolerance applies would that scale is also appropriate for tests where the maintenance tolerance of 7 % applies.

It should be noted that several industry reviewers have suggested the development of a new EPO 29 appendix that outlines test procedures that use of a master meter transfer standard (which is a test method also recognized in NIST HB 44) for verification of a hydrogen gas dispenser.

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If you have questions or comments regarding the USNWG or NIST OWM's work on hydrogen projects in the areas of U.S. 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.

ASME - ASME Code Case 3078 on Electrochemical Cell Stacks **Karen Quackenbush**

The ASME Task Group is working to improve the code case. A new revised draft is currently out for letter ballot. If it passes, it will move to the Section VIII Committee for vote.

The Code Case will not be adopted into the code as mandatory during the current code cycle for 2025. The soonest this could happen is now 2027.

ASME is holding their Code Week in Lake Buena Vista, FL from October 27-31. The ECS Task Group will meet on October 28, and the Section VIII Committee will meet on October 31st.

Hydrogen Aviation **Karen Quackenbush**

Have had a number of people reach out noting that hydrogen aviation has not been represented in this group. In particular, the gaps that exist for ground fueling equipment has been raised. There has been discussion for a need to coordinate aviation standards, potentially within this group. A leading company in this space is looking to initiate a discussion on this topic for our meeting in October or November.

VII. Open Discussion & Other Issues

None at this time.

VIII. Next Meeting – Wednesday, Oct 2 at 2:00 PM US Eastern.
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