

H2 Storage Regulations (NHA WG 8)

Navigate various National and International regulations (DOT, etc.) for Hydrogen storage technologies – including on-board vs. off-board applications.

- Chairman: Jim Ohi, NREL
- Report

NHA WG 8 Scope

In an effort to evaluate the status quo and locate gaps, Working Group 8 will identify and assess the domestic and international codes, standards and regulations which have an impact on all types of hydrogen storage.

NHA WG 8 Next Steps

- Develop a useable document that catalogs the codes, standards and regulations (CSRs) for all types of hydrogen storage to identify the appropriate CSRs by application.
- Determine format for the CSR Matrix, and fill-in (Sept. 22-23).
- Identify matrix procedural requirements for the jurisdictions having authority
- Identify gaps and evaluate international codes, standards and regulations.
- Seek input from working group to populate the matrix (responses back to NHA by Oct. 15, 2003)

Hydrogen Storage Standards, Codes, and Regulations in North America

	Container Materials, Fabrication, Testing	Shipping, Transport	Location, Installation	Performance Testing, Use
Liquid				
Bulk	ASME , 49 CFR 100-185		NFPA 55, ICC	
Vehicular				
light-duty				FMVSS 49 CFR 500-599
heavy-duty				
Gaseous				
Bulk			NFPA 55	
Vehicular				
light-duty				
heavy-duty				
Portable				
Micro				UL 2265
Solid Media				
Bulk				
Vehicular				
light-duty				
heavy-duty				
Portable				
Micro				

Notes: Standard (typically adopted by a local jurisdiction)

Code (controlling authority typically state or local jurisdiction)

Regulation (controlling authority could be local or state jurisdiction or federal agency)

Analyze Impacts of Draft Global Technical Regs. (NHA WG9)

The European Union is developing global technical regulations for hydrogen vehicles. Through a UN committee, the US and other non-European countries have opportunities to comment. The UN may adopt these as Global Technical Regulations. How would this impact U.S. companies? How would it be implemented in the US?

- Chairman: Karen Hall
- Report

WG9 Update

- 15 participants
- Concerned that US divisions of multinational OEMs are not engaged in C&S process, particularly GTRs
 - NHA to send letters to key persons to increase awareness
- Draft regulations are available at www.eihip.org

WG9 Update, continued

- Upcoming meetings of interest
 - WP29 Informal Hydrogen Group – October 6, 2003 – Munich
 - SAE Motor Vehicle Council – October 2003
 - DOE Energy Ministry – November - DC
 - GRPE – January 2004

Support DER Road Show (NHA WG10)

NHA has already prepared a training module on hydrogen for this purpose. Activity would include participation in Road Shows that request hydrogen training to present the module, and arrange hardware demonstrations from members in Road Shows locations near member companies.

- Chairman: Russell Hewett, NREL
- Report

NHA WG 10 Scope

The Work Group determined that the current scope is tentative, and the WG will need to better understand the content and focus of the DER road show modules related to hydrogen and hydrogen safety to adequately determine the WG 10 scope.

NHA WG 10 Scope

- (1) Provide technical support to DER in preparing hydrogen and hydrogen safety-related modules
- (2) Participate in road shows that involve hydrogen training/present hydrogen training modules
- (3) Participate in road shows involving hydrogen training by arranging and/or conducting hardware demonstrations
- (4) Evaluate usefulness of hydrogen training modules to the target audiences by attending such sessions and querying participants
- (5) Keep abreast of hydrogen and hydrogen safety-related information, success stories, breakthroughs, etc. and provide information to DER to update hydrogen training modules
- (6) Serve as a resource for DER specifically regarding hydrogen generation/production

NHA WG 10 Next Steps

- Obtain DER hydrogen training modules and review regarding currency of information and make recommendations regarding WG scope and/or enhancements to existing modules and new modules
- Timeline: Complete review of existing DER hydrogen modules (31 Dec 03)

CSA support of NGV revisions for H2 tanks (NHA WG11)

CSA has invited the NHA to provide hydrogen experts as potential members of the TAG to develop the NGV2 standard to address hydrogen on-board vehicle storage cylinders.

- Chairman: Russell Hewett, NREL (Acting)
- Report

NHA WG 11 Scope

- 1) Inspection and maintenance of on-board vehicle hydrogen storage cylinders
- 2) Re-qualification and life-times of on-board hydrogen storage cylinders
- 3) Materials compatibility issues: hydrogen and storage tank materials
- 4) On-board storage tanks for storing chemicals/fuels for generating hydrogen on-board the vehicle
- 5) Harmonization of NGV2 with NFPA 52
- 6) Specifications for on-board cylinders used to store hydrogen generated on-board
- 7) Safe positioning of hydrogen cylinders in vehicles/crash worthiness issues

- Consensus was that the NHA Work Group 11 not be constituted as everything proposed for the WG 11 scope in progress. The WG could not identify additional items that needed to be conducted. The needed activities are being led by CSA and CSA staff agreed to provide input to NHA for its newsletter on a monthly basis regarding the NGV2 and PRD1 group activities.
- The consensus was that the WG 11 be disbanded and they recommended that the NHA establish a formal liaison with CSA relative to the NGV2 and PRD1 standards development activities. Spence Grieco, of CSA agreed to provide an update on a monthly basis. A role for the NHA might be to host a meeting of the CSA NGV2 and PRD1 technical committees.

Portable power coordination (NHA WG12)

Work with contacts at DOT and DOD involved in portable fuel cell activities to facilitate safety, C&S information transfer between government and industry. Begin to develop performance test requirements.

- Chairman: Harry Jones, UL
- Report

NHA WG 12 Scope

To track and communicate efforts and develop broad industry consensus related to the development of safety and performance related solutions for the hydrogen and hydrogen-related portable energy conversion devices. To act as the guiding conduit for all stakeholders, leading and planning the most effective and efficient combination of efforts that best serves the involved industries.

NHA WG 12 Next Steps

1. Review definitions of “portable”, “mobile” and “transportable” power applications to adopt one (in part, whole, combination or modified) that works for this working group. (ASME-H.Jones, ICC-K.Hall, UL 2265-H.Jones, IEC TC 105-H.Jones, IEEE 1547-S.Hester, IEEE 1608-S.Hester, UL 1741-H.Jones, CSA FC3-H.Jones, PTC50-H.Jones, USFCC-B.Walsh) Responses to P. Serfass by Oct. 30, 2003.
2. Develop a list or white paper describing the current situation of challenges for the portable fuel cell industry, and the needs of the regulatory groups and customers. This will include identification of current and developing codes, standards, and regulations. H.Jones to draft the document by Oct. 30, 2003.
3. Record the current and needed communication linkages between our committee and the various stakeholders.
4. Highlight any efforts being made to develop solutions that compromise fuel cell markets or technologies.
5. Evaluate test requirements for safety and performance to help insure broad industry consensus in their development and modification.
6. Create a list of items that may need further action to accomplish the desired result.

Support NFPA Hydrogen Coordinating Committee (NHA WG13)

Review NEC and other NFPA documents to determine if there are any issues regarding hydrogen safety and developing C&S activities for hydrogen system components.

Are proposals for changes warranted?

- Chairman: Ned Stetson, Texaco Ovonics (Acting)
- Report

NHA WG13 Scope

- The Working Group will help keep the NHA informed of the activities of the NFPA Hydrogen Coordinating Group. The Working Group will provide assistance to the NFPA Hydrogen Coordinating Group in developing and reviewing proposals regarding hydrogen safety and hydrogen system installations. The Working Group will also provide assistance to the NFPA technical committees.

NHA WG13 Next Steps

- Step 1: Identify a permanent Chair as soon as possible.
- Step 2: Identify and contact other stakeholders who can provide value to the WG
- Step 3: Coordinate the WG 13 activities with the NFPA Hydrogen Coordinating Group (HCG) scheduled efforts. See link on NHA web site (<http://www.hydrogensafety.info/articles/NFPA-7-8-03.pdf>)
- Step 4: Participate in the scheduled NFPA HCG Conference Calls

Continue ongoing coordination activities with SAE, USFCC, DOE, others (NHA WG14)

Continue to provide hydrogen safety expertise to SAE and USFCC working groups, DOE Hydrogen C&S Coordinating Committee, ASME, UL, and other efforts as appropriate. Keep hydrogen community informed of hydrogen issues – solicit input to activities. Help assure technical harmonization.

- Chairman: None – Information dissemination only
- Reports to be made following morning break