

MINUTES OF THE MARCH 2008 TELECONFERENCE OF THE NATIONAL HYDROGEN AND FUEL CELLS CODES & STANDARDS COORDINATING COMMITTEE

MEETING DATE: March 5, 2008

MEETING TIME: 1:00 – 2:30 PM (MST)

FACILITATOR: Russ Hewett, NREL

1.0 MEETING PARTICIPANTS

Russ began the meeting by welcoming everyone and doing the roll call. The Coordinating Committee is a collaborative activity of DOE, the National Hydrogen Association (NHA), the US Fuel Cell Council (USFCC) and NREL.

[Teleconference meeting participants](#) (75Kb PDF)

Russ announced that Ian Sutherland of General Motors would be joining the Committee. Ian is a member of the DOE Hydrogen Safety Panel and the GM FreedomCar Codes & Standards Tech Team. Unfortunately, he was on business travel during March's meeting.

2.0 REVIEW OF USFCC ANTITRUST GUIDELINES

USFCC members were asked by Sondra Ullman to be mindful of the anti-trust guidelines, which can be found on the USFCC members' website, as well as an attachment to the minutes of past meetings.

[Antitrust Guidelines](#) (27Kb PDF)

3.0 REVIEW OF/CORRECTIONS TO DRAFT MINUTES FROM PRIOR TELECONFERENCE MEETINGS

The draft Minutes of the February 6th teleconference meeting were approved without additions or corrections.

They will become "final" and submitted for posting on the NHA Hydrogen and Fuel Cells Safety Report website.

4.0 OPPORTUNITY FOR DOE/HQ REPRESENTATIVE TO PROVIDE LATEST INFORMATION ON WHAT'S GOING ON AT DOE

Antonio Ruiz was unavailable to participate in the meeting due to a prior commitment. No one else was available to give an update on DOE/HQ activities.

The DOE merit review will be held the week of June 9th at the Crystal City Marriott Hotel in Alexandria, VA.

5.0 REPORT ON NFPA ACTIVITIES

Marty Gresho (Chairman of the Technical Committee for **NFPA 2**) reported on NFPA activities. With Carl Rivkin's leaving NFPA and

taking a position at NREL, Marty introduced the person who will be replacing him:

Paul May, Fire Protection Engineer
Email Address: pmay@nfpa.org
Telephone: (617) 770-3000

Paul will also become the new staff liaison for **NFPA 2**. In addition, Paul will serve as the NFPA staff member on HIPOC.

The next meeting of the full technical committee for **NFPA 2 (Hydrogen Technologies Code)** will be June 26-27 at NREL in Golden, CO.

The next meeting of the technical committee for **NFPA 55 (Standard for the Storage, Use and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders and Tanks)** will be April 16-17 in San Antonio, TX. The meeting will be devoted to addressing the Reports on Proposals (ROPs) resulting from the comments period for the new edition of **NFPA 55**. The technical committees for **NFPA 2** and **NFPA 55** worked jointly on generating of a separation distances table. The table was submitted as a ROP for **NFPA 55**. The ROP will be considered at the meeting of the **NFPA 55** technical committee. Assuming the table is adopted for **NFPA 55**, it will then be extracted back into **NFPA 2**.

6.0 FOLLOW-ON DISCUSSION: NEW YORK CITY'S REVISION OF IT'S CODES AND PROPOSAL TO COMMITTEE TO GET INVOLVED WITH THE CITY

During February's meeting, Karen Hall (representing NHA) and Tony Androsky (representing USFCC) presented a proposal for initiating an effort targeted at key New York City officials to pave the way for a workshop that would familiarize City permitting and fire safety officials with the hydrogen and fuel cell technologies and the permitting of hydrogen fueling station and fuel cell projects.

The proposal involved inviting key City officials to a carefully-arranged, half-day meeting in Sacramento, in parallel with the **NHA 2008 Annual Hydrogen Conference and Expo** (target date of Monday, March 31st). NHA and USFCC would cover the expenses of the invitees. The objectives of the meeting would be to: (i) familiarize the guests with hydrogen and fuel cells; and (ii) learn what NYC would need from the hydrogen and fuel cell industries to facilitate the future permitting of these technologies in the City. The City representatives would be treated as guests, and given a tour of the exhibits, making scheduled stops at pre-arranged booths to see and touch the technologies. They would also be taken to the Ride & Drive demos, so they can ride and drive the vehicles, and experience hydrogen fueling.

After the discussion during February's meeting, several potential problems and issues were identified. One was making sure to take the representatives to a state-of-the-art fueling station. It was pointed out that the CaFCP fueling station is out-of-date and is not representative of the fueling stations planned for NY City. Another

issue was that it might not be possible to get the City AHJs to California. It was suggested that NHA and USFCC consider having the meeting in Washington, DC, since having it there would be conducted in an environment that they could control. Furthermore, the Shell HFS in DC is more state-of-the-art.

The action item from February's meeting was for Karen and Tony to investigate whether the key NYC representatives would be willing to meet with us in either location, and then get back with Antonio, Jim and Russ with the results and their recommendations.

Karen and Tony gave their report in March's meeting. When City officials were contacted, they appreciated the opportunity to go to the **Annual Conference** in Sacramento but were unable to commit to sending strategic personnel. They are in the process of permitting a big hydrogen project and are short-staffed. Consequently, NHA and USFCC will work towards having a meeting with City officials in April in either Washington, DC or the City. The objective would be to work out the details for a possible **Hydrogen Fueling Station and Telecommunications Permitting Workshop** in the New York City area in the spring.

Representatives from DOE, NREL, NHA and USFCC will meet in Sacramento in the afternoon of March 31st to plan the meeting with City officials and to plan the agenda and other efforts for the **Workshop**.

7.0 REPORT ON CALIFORNIA HYDROGEN FUELS PROJECT'S EFFORTS TO DEVELOP A CALIFORNIA-SPECIFIC HYDROGEN FUEL QUALITY STANDARD

John Mough (California Department of Food and Agriculture/Division of Measurement Standards (DMS)) reported on the status of development of the California hydrogen fuel quality regulation for public fueling stations.

The proposed regulation has been modified a third time as a result of a comment received from within the California government, as a result of the second comment period. The comment resulted in modifying the regulation regarding how and when enforcement would occur. Modification 3 is now out for a new 15-day comment period that will end on March 18th. The regulation has been posted on the following website:

www.cdffa.ca.gov/dms/hydrogenfuel/HydrogenFuelRegulations.pdf

8.0 REPORT ON THE CALIFORNIA FUELS PROJECT'S EFFORTS TO DEVELOP A CALIFORNIA-SPECIFIC HYDROGEN FUEL DISPENSER STANDARD

John Mough briefly reported on this activity in Norm Ingram's and Gary Castro's unavailability. Gary was at a meeting working on the issue. Norman and Julie Cairns are also working collaboratively.

An update will be provided for the April teleconference meeting of the Coordinating Committee.

Ben Deal (California Air Resources Board) reported that CARB is

working on a regulation (1505) addressing emissions associated with hydrogen production. The regulation will include threshold levels of greenhouse gases and other emissions. In addition, it will include the requirement that a portion of hydrogen production be from renewable resources. The regulation can be found at: www.arb.ca.gov/msprog/hydprod.htm

9.0 REPORT ON HYDROGEN INDUSTRY PANEL ON CODES (HIPOC) ACTIVITIES

Paul Buehler, who attended the ICC Code Development Hearings held February 18 – March 2 in Palm Springs, CA, gave an oral briefing on the results of the hydrogen-related code proposals (in the absence of Tom Joseph and Darren Meyers).

There were 15 hydrogen-related proposals. However, two were withdrawn, so 13 were considered by the technical committees. Of the 13, seven were "approved as submitted" or "approved as modified." Summaries of the 15 proposals, as well as their dispositions at the Hearings, are shown in [Attachment A](#).

10.0 REPORT ON IEC/TC105 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE

Kelvin Hecht was on travel but submitted this report on IEC/TC105 activities: [Kelvin's report](#) (106Kb PDF)

The report also includes February statistics on usage of the **Hydrogen and Fuel Cells Codes and Standards Matrix and Database** website. The address for the website is: www.fuelcellstandards.com

11.0 REPORT ON ISO/TC197 ACTIVITIES AND DOCUMENTS IN THE "COMMENTS" STAGE

Both Debbie Angerman and Glenn Scheffler reported on ISO/TC197 activities. Debbie provided this report: [Debby's report](#) (129Kb PDF)

Glenn reported that **ISO TS 14687-2:2008 Hydrogen fuel-Product specification- Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles** has been published and is available through CGA at: www.cganet.com

Glenn also reported that **ISO/DIS 16111** has been approved. The US voted to approve, but with comments. The comments will be submitted to WG 10 (Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride) for consideration.

The US has added Greg Milewski (Shell Hydrogen) and Bob Boyd (Linde) as US experts to WG 11 (Gaseous Hydrogen – Service stations).

Jim Ohi mentioned that WG 12 (Hydrogen fuel – Product specification) would be holding meetings April 3-4 at PG&E in San Francisco.

It was also reported that ISO/TC197 is addressing the possibility of a

new work item: hydrogen/methane blends.

The next ISO/TC197 plenary meeting will be held in Brisbane Australia June 15 – 19.

12.0 REPORT ON UPCOMING DOE/NASFM/CaFPI HYDROGEN FUELING STATION AND TELECOMMUNICATIONS PERMITTING WORKSHOP

Jim Ohi briefed the Coordinating Committee on the upcoming **Hydrogen Fueling Station and Fuel-Cells-for-Telecommunications Permitting Workshop** to be conducted collaboratively by DOE, NASFM and the California Fire Prevention Institute as part of CaFPI's **2008 Annual Conference**. The Workshop will be held 12-13 March at the Santa Ynez Valley Marriott in Buelton, CA (near Santa Barbara).

The workshop will be similar to the national workshop held in Atlanta in July 2007, but with the following differences:

1. In addition to the permitting of hydrogen fueling stations, it will include the permitting of telecommunication projects involving hydrogen fuel cell systems
2. It will include presentations on telecommunications applications of hydrogen fuel cell systems and representatives from the telecommunications industry
3. It will be the first in a series of regional, rather than national workshops

Opportunities for additional workshops will be identified by industry. The next workshop is expected to be conducted in the New York City metro area in the late Spring. It will be targeted at fire safety and permitting officials in New York City, New York State and New Jersey. This will be a DOE/NREL/NASFM/NHA/USFCC collaborative effort.

Jim also reported that, at the workshop, NREL will "unveil" the new **Hydrogen and Fuel Cells Codes and Standards** website that is being developed for permitting officials. The website will provide a unique resource for building code, fire marshals, fire safety and other local/state officials involved in the permitting of: (i) hydrogen dispensing equipment in existing vehicular fueling stations that dispense gasoline and diesel fuel; and (ii) new retail multi-fuel fueling stations with hydrogen to be one of the fuels dispensed.

The website will be a "one stop" repository /data base relating to hydrogen fueling stations, and includes case studies, technical information regarding fueling station equipment appropriate for permitting officials, etc.

The website also includes the **Hydrogen Fueling Station Permitting Process** which is a tool for taking permitting officials step-by-step through all the issues involved in the complete permitting of a fueling station. Currently, NREL is working to add a telecommunications permitting process module to the website.

The address for the website is as follows: www.hydrogen.energy.gov/fueling_stations/index.cfm

13.0 OPPORTUNITY FOR CDOs AND SDOs TO REPORT ON THEIR ACTIVITIES

13.1 CSA America

Julie Cairns reported that CSA will convene in-person meetings of the technical committees for the **HGV 4** series of draft standards to consider and act on comments received as a result of the Comments Period. The objective will be to get the drafts to the point that they can be issued as **Interim Requirements** documents for use in demonstration projects.

13.2 SAE

Glenn Scheffler reported on SAE activities.

The SAE Safety Working Group will have four days of meetings during the period 17 – 20 March. A major focus will be on getting **SAE J2578 (Recommended Practice for General Fuel Cell Vehicle Safety)** ready for re-balloting. Glenn expects that the WG will devote two days to this activity.

SAE J2719 (Information Report on the Development of a Hydrogen Quality Guideline for Fuel Cell Vehicles) was successfully balloted and will be published shortly.

SAE J2579 (Technical Information Report for Fuel Systems in Fuel Cell and Other Hydrogen Vehicles) has been published. The WG will immediately begin an update cycle that will address electrical issues.

The **SAE 2008 World Congress** annual conference will be held April 14 – 17 in Detroit. It will include sessions on hydrogen safety and fuel cell vehicles.

The Spring Meeting of ISO/TC22 SC21 (Electrically Propelled Road Vehicles) will be held April 7 – 9 in Sweden.

13.3 Compressed Gas Association (CGA)

Debbie Angerman reported that CGA has published the newest version of **CGA H-5 (Installation Standards for Bulk Hydrogen Supply Systems)**.

13.4 ASME

John Koehr introduced a new ASME participant for the Coordinating Committee:

Anthony Amato, Project Specialist

Email Address: amatoa@asme.org

Telephone: (212) 591-7003

Anthony is the secretary for the ASME BPV Project team on Hydrogen Tanks.

14.0 NEXT MEETING

The next meeting will be a teleconference meeting as follows:

- DATE: April 9th (Second Wednesday)
- TIME: 3:00 – 4:30 pm EST

Many Coordinating Committee participants will be attending the **NHA 2008 Annual Conference & Expo (Ramping Up Commercialization)**, which will be held March 30 – April 3 in Sacramento, CA. Consequently, it was agreed to have the meeting on the second Wednesday, rather than the first.

ATTACHMENT A: HYDROGEN-RELATED PROPOSALS CONSIDERED AT THE ICC CODE DEVELOPMENT HEARINGS (Hearings Held February 18 – March 2 in Palm Springs, CA)

| ICC DOCUMENT | PROPOSAL NUMBER | PROPOSAL DESCRIPTION | CODE HEARINGS ACTION |
|---------------------|------------------------|---|-----------------------------|
| IFC | F78 | Requirements for structures and outdoor storage underneath high voltage transmission lines | Approved as modified |
| IFC | F231 | Requirement that HFS equipment (e.g., cylinders, PRDs, etc.) be designed and constructed in accordance with Chapters 30 and 32 | Disapproved |
| IFC | F232 | Delete outdoor public assembly setback requirement from Table 2209.3.1 | Disapproved |
| IFC | F233 Part 1 | Requirement for vehicles to be fueled on non-coated concrete or other approved paving material having resistance not exceeding 1 megohm as determined by methodology in DIN EN 1081:1998 | Approved as submitted |
| IFC | F233 Part 2 | Adding the requirement as specified in F233 Part I above to the IBC | Disapproved |
| IFC | F234 | Requirement for indoor fast-fill hydrogen dispensing including: equipment location, safety precautions, fire alarm and detection | Disapproved |

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| | | systems, ventilation, etc. | |
| IFC | F245 | Proposal to replace the term "Flammable Solids and Gases" with the term "Flammable Solids" and add a new term "Compressed Gases" with respect to classifying chemicals vis-a-vis physical hazards | Disapproved |
| IFC | F260 | Separation distance requirements for tube trailers containing compatible compressed gases and those containing incompatible compressed gases | Approved as submitted |
| IFC | F282 | Clarify references for bulk flammable gas storage relative to hydrogen fuel dispensing | Approved as submitted |
| IFC | F283 | Requirement for compressed gases to comply with Chapter 30 and cryogenic fluids comply with Chapter 32. Bulk compressed hydrogen and bulk liquefied hydrogen systems are to comply also with NFPA 55 | Approved as submitted |
| IFC | F285 | Proposed revisions to Table 3504.2.1 specifying distances to exposures for flammable gases | Withdrawn by proponent |
| IFC | F286 | Additional revisions to Table 3504.2.1 specifying distances to exposures for flammable gases | Withdrawn by proponent |
| IFC | F287 | Canopies for sheltering outdoor flammable gas storage or use areas are to be constructed in accordance with Section 2704.13 and the IBC . Separation | Approved as submitted |

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| | | distances are to be in accordance with Table 3504.2.1 | |
| IFGC | FG49 | Stationary fuel cell systems having power outputs not exceeding 10 MW are to be tested in accordance with ANSI CSA America FC 1 and installed in accordance with the manufacturer's instructions, NFPA 853 , the IBC and the IFC | Approved as submitted |
| IBC | G28 | Canopies used to shelter dispensing operations are to comply with Section 406 and the IFC | Approved as modified |