

## National Hydrogen and Fuel Cells Codes & Standards Coordinating Committee Teleconference

**MEETING DATE:** February 1, 2006

**TIME:** 1:00 - 2:30 PM (MST)

### 1.0 PARTICIPANTS

The list of meeting participants is provided in [Attachment A](#).

### 2.0 REVIEW OF ANTI-TRUST POLICY

USFCC Codes and Standards Working Group meetings begin with the reminder to review and follow the anti-trust guidelines in the following web documents:

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

and

[Memo on Antitrust Guidelines](#) (24Kb PDF)

### 3.0 CORRECTIONS TO MINUTES OF JANUARY'S MEETING

In Russ Hewett's absence, the Minutes of January's meeting were prepared by Robert Wichert, with input from Karen Hall and Patrick Serfass. Completion of the Minutes required input from several people who gave reports at January's meeting. Unfortunately, Robert did not receive all of the additional inputs prior to his leaving on business travel. Consequently, the Minutes of January's meeting were not disseminated prior to February's meeting. Russ Hewett had the action item to disseminate Draft Minutes of January's meeting (which he did on February 2nd). The final version of those Minutes will be prepared after corrections (if any) are received.

### 4.0 OPPORTUNITY FOR DOE/HQ SUBPROGRAM MANAGER TO REPORT ON WHAT'S GOING ON AT DOE/HQ

Pat Davis (DOE/HQ Technology Development Manager for Safety, Codes and Standards) re-iterated that the competitive solicitation -- issued by DOE/HQ -- to select a contractor to put all of the subcontracted codes and standards development work into a single large contract is active and that proposals are due by COB March 10th.

Pat also mentioned again the announcement made by DOE Secretary Samuel W. Bodman regarding three new initiatives to advance President Bush's Hydrogen Fuel Initiative:

- Fuel Cell R&D (\$100 million)
- Fuel Cell Membrane R&D (\$19 million)
- The Roadmap on Manufacturing R&D for the Hydrogen Economy

[DOE Hydrogen Fact Sheet](#) (131Kb PDF)

With respect to the budget for the Hydrogen, Fuel Cell and Infrastructure Technologies Program for FY07, Pat mentioned that the "rollout" of the budget would be on February 6th.

[DOE Hydrogen Budget Request](#) (417Kb PDF)

Pat mentioned that DOE/HQ was working on the recommendation made by the National Academy of Sciences to establish a safety bibliography. It is expected to be online and available in April 2006.

Pat added that DOE/HQ is in the process of creating an online *Hydrogen Incidents* Data Base that should be available for use in May. The database will be open to other organizations (e.g., USDOT) to put in additional incidents data.

The question was asked of Pat if, as a result of President Bush's State of the Union Address, the Hydrogen

Program could receive additional funding. Pat does not think additional funding is likely.

## **5.0 FOLLOW-UP DISCUSSION REGARDING GLOBAL TECHNICAL REGULATIONS (GTRs) AS THEY RELATE TO HYDROGEN FUEL CELL VEHICLES**

The focus in January's teleconference meeting was on GTRs and the GTR process as they relate to hydrogen fuel cell vehicles. The discussion was led by Nha Nguyen (NHTSA Office of International Policy and Harmonization). Nha is a member of the GTR Sub-Group - which is an entity within the United Nations World Forum for the Harmonization of Vehicle Regulations (WP.29). The US representative to WP.29 is Julie Abraham (NHTSA).

Nha re-iterated that WP.29 would be having a meeting in March 2006 and the primary topic for discussion is expected to be: (1) selecting the chairman; and (ii) finalizing development of a road map which outlines the GTR development process. Nha mentioned that the US is working to generate an informal paper listing the requirements that the US would like to have in the GTRs. This paper is to be presented at the March meeting.

During the January teleconference meeting, Nha mentioned that already-developed Japanese regulations might be used as the model for generating GTRs. An action item for Nha from January's meeting was to make copies of the Japanese regulations available to the Coordinating Committee. They are available below:

- [Safety Regulation Article 1](#) (35kb PDF)
- [Safety Regulation Article 1-3](#) (21kb PDF)
- [Safety Regulation Article 17](#) (22kb PDF)
- [Safety Regulation Article 17-2](#) (21kb PDF)

Nha provided additional materials that are attachments/backup materials to the above regulations. Since they consume about 5.0 megabytes, they have not been attached to the Minutes. There are two action items:

1. Russ Hewett's creating a CD and making it available to those wanting the materials
2. Russ Hewett's forwarding all of the materials relating to the Japanese regulations to NHA for posting on their National Coordinating Committee website.

If the March meeting of WP.29 takes place before the March In-Person meeting of the Coordinating Committee, the agenda will include a debriefing on it.

## **6.0 REPORT ON IEC/TC105 ACTIVITIES AND CODES & STANDARDS DOCUMENTS IN THE "COMMENTS" PROCESS**

Kelvin Hecht (chairman of the US TAG for IEC/TC105) reported on IEC/TC105 activities.

[Kelvin Hecht's report](#) (90Kb PDF)

In addition, Kelvin reported that, while the National Coordinating Committee was having its meeting, Working Group 8 (Micro Fuel Cell Power Systems - Safety) was meeting to address the latest version of their draft standard.

Kelvin mentioned that the US standard for stationary fuel cell power plants performance testing is **ASME PTC50 (2002 Fuel Cell Power Systems Performance)**.

However, IEC/TC105 WG 4 (Stationary Fuel Cell Power Plants - Performance) is developing international standard (draft) **IEC 62282-3-2 (Stationary Fuel Cell Power Plants - Performance Test Methods)**. It is up for final approval in February.

ASME will be meeting to discuss whether or not to harmonize with the new international standard. Coordinating Committee members are invited to give their comments regarding harmonization either to Robert Wichert or Kelvin Hecht.

## **7.0 REPORT ON ISO/TC197 ACTIVITIES AND CODES & STANDARDS DOCUMENTS IN THE "COMMENTS" PROCESS**

Bob Mauro (chairman of the US TAG for ISO/TC197) reported on ISO/TC197 activities.

[Bob Mauro's report](#) (60Kb PDF)

In summary, there are four items out for vote as mentioned in Bob's report.

## **8.0 PROPOSED MODIFICATIONS TO THE NATIONAL TEMPLATES FOR CODES & STANDARDS DEVELOPMENT**

During January's meeting, Jim Ohi discussed the possibility of the lead for the development of standards for on-board hydrogen storage tanks perhaps being changed from CSA America to SAE. The action item from that discussion was for the issue to be discussed further during February's meeting.

Instead of that specific issue with respect to the templates, Jim offered the proposal that the templates be reviewed thoroughly as part of the March In-Person meeting to determine if changes are needed.

There was general agreement that, since the templates were formulated about four years ago, it makes sense to re-examine them from two perspectives:

- What are we trying to accomplish with the templates (has the purpose of the templates changed?)
- Who do the templates serve?

It was agreed that the templates would be on the agenda for March's In-Person meeting.

[National C&S Templates](#) (93Kb PDF)

## **9.0 REPORTS FROM CDOS AND SDOS AS THEY RELATE TO COORDINATION**

### **9.1 Model Code Organization (MCO) Activities**

Carl Rivkin was not able to participate due to a prior commitment. However, Patrick Serfass and Darren Meyers reported jointly on new work emerging from the national model code organizations designed to harmonize the fixed-facility hydrogen code and standard activities of the ICC and NFPA to facilitate a successful industry commercialization decision by 2015.

Objectives include:

1. Reviewing current codes and standards applicable to the storage, dispensing, use and handling of hydrogen in and around fixed-facility applications to the degree they apply to the ICC International Codes and the codes and standards developed by NFPA.
2. Developing industry-sponsored proposals that revise or otherwise harmonize the appropriate, reasonable and enforceable model health and safety provisions of the International Codes and the codes and standards developed by NFPA that affect or relate to the storage, dispensing, use and handling of hydrogen in and around fixed-facility applications - service stations, parking garages, warehouses, loading areas and similar uses which support vehicular, distributed and portable power applications

The new work will be conducted by a Hydrogen Industry Panel on Codes (HIPOC), representing eight industry-sector interests -- fire safety/prevention, building safety/fuel gas, OEM vehicles/fuel cells, energy company, industrial gas and chemical, academia, chair of NFPA 55, and chair of NFPA 2.

As excerpted from the Draft Charter, its purpose is as follows:

A Hydrogen Industry Panel on Codes (the Panel) is hereby created with the goal to extend and to the best extent practicable, harmonize hydrogen code and standard development activities within the ICC and NFPA such that the proper codes and standards are in place (and stay in place) through the conclusion of the 2007/08 ICC Code Development Cycle (2009 Editions) and the conclusion of the 2009 NFPA Codes & Standards Process. This will coincide with the goal of the US Department of Energy (DOE) to facilitate a successful industry commercialization decision by 2015.

The following documents are available:

- [Draft charter for and background information about the HIPOC](#)(112Kb PDF)
- [ICC 2006/2007 Code Development Cycle](#) (18Kb PDF)
- [NFPA hydrogen-related documents and the dates for their revision cycles](#) (21Kb PDF)

For the ICC Code Development Cycle, the next critical date, with respect to proposed changes to the codes, is March 24, 2006 - the deadline for receipt of proposals. Generating code change proposals in response to the ICC schedule will be an initial priority of the HIPOC as activities get under way. Coordinating Committee members were asked to submit proposed changes to the ICC codes for the HIPOC to consider. He asked that such proposals be submitted to him (or to Carl Rivkin) by the end of February.

## **9.2 NFPA Activities**

While Carl Rivkin was not able to participate in the meeting because of a prior commitment, he participated "virtually" by submitting two write-ups.

An action item from January's teleconference meeting was for Carl to provide additional information regarding NFPA's new Hydrogen Technologies Technical Committee. The committee was established to have primary responsibility for documents on the storage, transfer, and use of hydrogen. The use of hydrogen would include stationary, portable, and vehicular applications. The Committee would also have responsibility for creating the initial NFPA 2 (Hydrogen Technologies Code) document.

[Technical Committee information](#) (72Kb PDF)

Carl also provided a listing of the NFPA hydrogen and fuel cell-related codes and standards documents and their development/modification schedules.

[NFPA documents](#) (119Kb PDF)

## **9.3 ASME Activities**

John Koehr submitted the following report regarding ASME activities:

The ASME H2 Steering Committee, which reported to the ASME Codes and Standards Board of Directors, was formally sunsetted in November 2005. The committee had accomplished its mission of evaluating the need for and initiating standards actions supporting Hydrogen infrastructure development. Efforts resulted in formation of project teams under the B31 and Boiler and Pressure Vessel Code (BPVC) standards committees.

The ASME B31.12 Project Team on Hydrogen Piping and Pipelines is developing a new standard for Hydrogen piping and pipelines in industrial, commercial, and residential applications. The project next meets January 31-February1, 2006 in Tampa, FL. An article by the chair, Lou Hayden, was posted on the [NHA Hydrogen and Fuel Cell Safety website](#)

The ASME BPVC Project Team on Hydrogen Tanks is developing new rules for stationary, transportable, and portable tanks in hydrogen service at pressures up to 15ksi. The scope includes metallic and composite materials as well as pressure vessels for metal hydride storage. The project team meets next on February 15, 2006 in Portland, OR.

ASME has formed a new task force on Hydrogen Codes and Standards that reports to the ASME Board on

Pressure Technology Codes and Standards (BPTCS). This task force is coordinating the standards activities between the B31 and BPVC project teams.

ASME is also active on the new Materials for the Hydrogen Economy Coordinating Group, which was formed last August during the workshop hosted by ASME and Savannah River National Laboratory in Augusta, GA.

### **10.0 PRE-PLANNING FOR THE MARCH IN-PERSON MEETING**

The March meeting of the Coordinating Committee will be an In-Person meeting in conjunction with the NHA 2006 17th Annual Hydrogen Conference to be held in Long beach, CA:

- DATE: March 15th
- SITE: Hyatt Regency Hotel/Long Beach (Conference Room to Be Determined)
- TIME: 3:00 - 6:00 pm (Pacific Standard Time)

For persons unable to attend in-person, there will be teleconferencing.

During the teleconference, the following topics were suggested for inclusion on the agenda:

1. Report/debriefing on the WP.29 meeting
2. Discussion regarding the national codes and standards development templates (modifications?)
3. Reports from the SDOs and CDOs regarding their hydrogen and/or fuel cell-related vehicle-level safety standards
4. Invited presentations from various TAGs involved in international standards development activities

*Because many of the persons serving on the various working groups of the SAE Fuel Cells Standards Committee will be participating in the NHA Annual Conference in Long Beach during the period March 11 - 15, the planned meetings of the working groups have been moved forward to the week of March 6th.*

Also, attached below for your information is the flyer regarding the CGA Hydrogen Seminar 2006 to be presented by CGA at the NHA Annual Conference on Thursday, March 16.

Respectfully submitted,  
Russ Hewett

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### **MEETING PARTICIPANTS**

#### **National Hydrogen and Fuel Cells Codes and Standards Coordinating Committee: Members that Participated in the February 2006 Meeting**

<b>NAME</b>	<b>ORGANIZATION</b>	<b>PRESENT AT MEETING (Yes/No)</b>
Adam Gromis	California Fuel Cell Partnership	
Andrei Tchouvelev	A. V. Tchouvelev & Associates, Inc.	
Antonio Ruiz	USDOE/Hydrogen, Fuel Cell and Infrastructure Technologies Program	Y
Bill Chernicoff	USDOT/Research and Innovative Technologies Administration(RITA)/Washington	

Bill Collins	UTC Fuel Cells	Y
Bill Hoagland	Hoagland and Associates	Y
Bob Mauro	Consultant to NREL	Y
Brad Smith	Shell Hydrogen	
Brian Walsh	US Fuel Cell Council	
Bruce Kinzey	Pacific Northwest Laboratory	
Carl Rivkin	National Fire Protection Association (NFPA)	(on business travel)
Carolyn Elam	DOE Golden Field Office	Y
Cathy Gregoire-Padro	Los Alamos National Laboratory (LANL)	
Christina Zhang-Tillman	California Fuel Cell Partnership	
Christopher Moen	Sandia National Laboratories/Livermore	Y
Dan Casey	ChevronTexaco	
Darren Meyers	International Code Council (ICC)	Y
Debbie Angerman	Compressed Gas Association (CGA)	
Doug Horne	Clean Vehicle Education Foundation	Y
Gary Howard	A. V. Tchouvelev & Associates, Inc.	
George Earle	Plug Power	
George Thomas	Consultant to Sandia National Laboratories	
Gerry Myers	SPRINT	
Greg Milewski	Shell Oil Products	
Hank Seiff	Clean Vehicle Education Foundation	
Holly Thomas	National Renewable Energy Laboratory (NREL)	
Jeff Grant	Ballard Generation Systems	
Jesse Schneider	DaimlerChrysler	Y

Jim McGetrick	BP	Y
John Koehr	American Society of Mechanical Engineers (ASME)	Y
Juana Williams	NIST	Y
Julie Cairns	CSA America	Y
Julie Willets	SPRINT	
Karen Hall	National Hydrogen Association (NHA)	Y
Keith Hardy	Argonne National Laboratory	
Kelvin Hecht	ANSI, IEC and Consultant to NREL	Y
Ken Krastins	Plug Power	Y
Larry Johnson	SPRINT	
Larry Moulthrop	Proton Energy Systems	
Laurie Florence	Underwriter Laboratories	Y
Mark Richards	Gas Technology Institute	Y
Michael Steele	General Motors Advanced Technology Vehicles	Y
Nha Nguyen	NHTSA/Office of International Policy and Harmonization	Y
Patrick Serfass	National Hydrogen Association (NHA)	Y
Pat Davis	USDOE/Hydrogen, Fuel Cell and Infrastructure Technologies Program	Y
Paul Buehler	Plug Power, Inc.	Y
Prentiss Searles	American Petroleum Institute (API)	
Robert Wichert	US Fuel Cell Council (USFCC)	(on business travel)
Rhoads Stephenson	Motor Vehicle Fire Research Institute	Y
Roger Smith	Compressed Gas Association (CGA)	
Sondra Ullman	Plug Power	Y

Spencer Grieco	CSA America	
Steve Turner	C&S Consultant	
Susan Townsend	General Electric Global Research Center	
Terry Conrad	Concurrent Technologies Corp.	Y
Thad Adams	Savannah River National Laboratory	
Tom Joseph	Air Products and Chemicals	Y
Tony Androsky	US Fuel Cell Council (USFCC)	
Jim Ohi	National Renewable Energy Laboratory (NREL)	Y
Russ Hewett	National Renewable Energy Laboratory	Y