



Hydrogen Industry Panel on Codes Statement of Charter, Purpose & Objectives

(Approved 3/22/2006 – Updated 8/30/2006)

Article I. Background

The global economy is engaged in a transition to hydrogen and other alternative fuel sources for automotive, distributed generation and other applications. The storage, dispensing, use and handling of hydrogen in and around fixed facilities differs in many ways from gasoline, diesel, natural gas and other traditional fuels. Only through a thoughtful and timely marriage of scientific and real-world considerations can this important transition proceed. The Hydrogen Industry Panel on Codes will serve as an on-going forum to exchange information concerning the public safety aspects of the transition to hydrogen while developing and supporting the changes to codes and standards that are necessary to harmonize the *International Codes* developed by the International Code Council (ICC) and codes and standards developed by the National Fire Protection Association (NFPA) affecting or relating to the storage, dispensing, use and handling of gaseous (GH₂) and liquefied hydrogen (LH₂) in ways that facilitate this transition.

Article II. Purpose

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 U.S. Department of Energy (DOE) to facilitate a successful industry commercialization decision by 2015.

Organizationally, the HIPOC will stand alone as a “virtual” collaborative entity with the staff resources of the ICC, the NFPA and the National Hydrogen Association (NHA) providing only administrative and clerical support to the panel while directing change proposals to the appropriate code and standard development committees at the Panel’s request. A website developed to function as a central clearinghouse of information relative to HIPOC activities will be created by NHA (<http://www.hydrogenandfuelcellsafety.info/hipoc/index.asp>) with links to/from the DOE, ICC, NFPA, NHA and other related websites.

Article III. Objectives

The objectives of the HIPOC are as follows:

1. Review 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 codes and standards developed by NFPA.
2. Develop or facilitate industry-sponsored proposals or positions that revise or otherwise harmonize the appropriate, reasonable and enforceable model health and safety provisions of the *International Codes* and codes & standards developed by NFPA that affect or relate to the storage, dispensing, use and handling of hydrogen in and around fixed-facility applications, including service stations, parking garages, warehouses, loading areas and similar uses which support vehicular, distributed and portable power applications. Such provisions are to serve as a model for adoption and use by enforcement agencies at all levels of government in the interest of national uniformity.
3. Topics for consideration by the HIPOC should include:
 - a) Integration of setback distance research and risk assessment guidance into separation tables,
 - b) Metal hydride usage/storage,
 - c) Dispensing systems reference standards/interface/grounding potential (DIN-EN 1081-1998, *Resilient Floor Coverings–Determination of the Electrical Resistance*) and vehicle refueling facility commissioning tests,
 - d) Integrating known characteristics and preventative handling measures for hydrogen into materials and university laboratory facilities,
 - e) Oxygen depletion thresholds for sensing in laboratory and industrial environments where compressed gases in association with hydrogen are used,
 - f) Unidirectional vents for naturally-convected rooms,

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- g) Integrate extra precautions, as appropriate, to indoor refueling provisions (potential for credible leakage events is greater during fueling than other times),
- h) Address repair garages for lighter-than-air fuels on the NFPA side,
- i) Inspections for hydrogen lines designed and fabricated to B31.3, *Process Piping*, and
- j) Vent stack clearances might need to differentiate between: 1) distances from personnel at the human height level (based on thermal effects); and 2) distances from ignition sources, air intakes and other operable openings in buildings (based on flammable gas concentration).

Article IV. Panelists

The Panel represents a collaborative industry opinion and does not speak on behalf of the DOE, the ICC, the NFPA or the NHA. Participation on the Panel is entirely voluntary and in no way part of any legal or regulatory, or official advisory process at any level of government. Terms of appointment shall be three years and may be renewed. Panel members also may be removed at the discretion of the Chairperson and Vice Chairperson for failure to adequately participate in program activities. Panelists may resign at any time.

Conflict of Interest: A panel member shall withdraw from and take no part in those matters with which the panel member has an undisclosed financial, business or property interest. The panel member shall not participate in any panel discussion on the matter or any panel vote. Violation thereof shall result in the immediate removal of the panel member from the panel. A panel member who is a proponent of a proposal shall not participate in any panel discussion on the matter or any panel vote.

Representation of Interest: Panel members shall not represent themselves as official or unofficial representatives of the ICC, the NFPA or the NHA except at regularly convened meetings of the panel.

Participation: Panel Members and Ex-Officio members only, except that a guest may address the committee on a subject relevant to items under consideration provided due notice of this intent is received by the Chairperson at least ten days prior to the meeting. The ten day notice may be waived by the Chairperson. The Chairperson shall designate the time allotted for any such participation.

If a committee member cannot attend, an alternate designated by the member may be sent to express the views of the absent member. The designated alternate may vote on behalf of the panel member. Panel members shall provide the Chair with an assurance of their ability to participate actively in the work of the committee including responding to correspondence and regular attendance at committee meetings.

The Panel shall consist of:

Voting:

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| 1. Fire Safety/Prevention | Iby George , Chief–Athens/Clarke County, GA
(Alternate: tba) |
| 2. Fire Safety/Tank Codes | Andrea Zajac , Chief–Storage Tank Unit, MI Dept. Environmental Quality
(Alternate: tba) |
| 3. NFPA 55 Chair | Michael St. Clair , NFPA 55 Chair–The Ohio State University, Ostrander, OH
(Alternate: tba) |
| 4. NFPA 52 Chair – Academia | Nancy Pehrson , NFPA 52 Chair–CenterPoint Energy, Minneapolis, MN
(Alternate: tba) |
| 5. OEM Vehicles/Fuel Cells | Glenn Scheffler , Chief of Engineering–UTC Fuel Cells, Windsor, CT
(Alternate: Michael Short, Staff Engineer, Safety and Reliability–UTC Fuel Cells) |
| 6. Energy Company | Greg Milewski , HSE Loss Prevention–Shell Hydrogen, Houston, TX
(Alternate: tba) |
| 7. Industrial Gas & Chemical | Tom Joseph , Manager of Engineering–Air Products&Chemicals, Allentown, PA
(Alternate: tba) |
| 8. Academia | Dr. Michael Swain , College of Engineering–University of Miami, FL
(Alternate: tba) |
| 9. NFPA 2 Chair | Martin Gresho , Fire Marshal Sandia Laboratory, Livermore, CA
(Alternate: tba) |
| 10. Fire Safety
CA Hydrogen Highway | Steve Guarino , Supervising Deputy, CA Dept. of Forestry & Fire Prevention
(Alternate: tba) <i>[[VOTE PENDING]]</i> |

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Ex-Officio:

HIPOC Staff (NHA)	Patrick Serfass, Director of Program & Technology Development
HIPOC Staff (ICC)	Darren Meyers, Manager of Contracts & Consulting
HIPOC Staff (NFPA)	Carl Rivkin, Sr. Chemical Engineer
HIPOC Staff (DOE)	Antonio Ruiz, Safety Engineer—Hydrogen Safety, Codes & Standards

Interested and Affected Parties:

Interested and affected parties may include, among others, representatives of state and local code enforcement agencies, other federal, state and local groups actively addressing this issue, national laboratories, testing laboratories, standards writing organizations, manufacturers, utility and other public service agencies, designers, parks and recreation agencies, insurance carriers and consumers. An e-mail address is required to be considered an *Interested and Affected Party*.

Article V. Meetings

To the extent possible group business will be conducted by virtual meeting format, by telephone conference or e-mail. There may be in person meetings but they will be kept to a minimum to reduce travel costs.

General Procedures: *The Robert's Rules of Order* shall be the formal procedure for the conduct of meetings of the panel except as a specific provision of these Rules of Procedure may otherwise dictate. A quorum shall consist of one-half of the voting members of the panel to conduct business of the panel. A majority of the voting members of the panel present is required for any panel action put to a vote.

Chair: A Chair and Vice-Chair shall be elected from the appointed members of the Panel.

Meeting Dates: All public meetings shall be announced at least two weeks in advance and be open to all interested parties. Panel Chairpersons may call such special meetings at such times as may be necessary and convenient for the transaction of business. Prior to issuing a call for such a meeting, the Chairperson shall consult with the staff liaisons from the DOE, ICC, NFPA and NHA to be apprized of other Panel meetings or other scheduled events which may affect attendance at the proposed meeting.

Distribution of Agenda: The Chairperson shall have distributed to the Panel, and to others expressing an interest, an appropriate agenda at least 14 days in advance of the date for which a meeting is called, or at such a time interval prior to the meeting as the membership of the Panel may earlier agree.

Minutes of Panel Meetings: Minutes of each Panel meeting shall be recorded in a form approved by the Panel and issued to Panel members without undue delay by the Panel Chairperson, or a duly appointed individual acting at the direction of the Chairperson. No other minutes shall be authorized. Verbatim transcriptions of Panel meetings made by tape recorders, stenotype machines, or other means shall not be permitted unless authorized by the Chairperson. Minutes shall, as a minimum, record the time and place of Panel meetings, names of persons attending, and a summary of actions taken. Minutes shall be approved by the Panel.

Article VI. Accountabilities

The Panel shall:

- Establish and maintain the free flow of information among the DOE, the ICC, the NFPA and the NHA, and facilitate objective discussions of the safety implications of the transition to hydrogen.
- Identify the most significant public safety concerns for consideration by state and local governments and those engaged in the development and implementation of the new hydrogen technologies.
- Maintain timely and accurate reporting of progress, resources and expenditures enabling the value of the Panel to be assessed.

Article VII. Resources and Support

The ICC, the NFPA and the NHA are responsible for providing office space, supplies, and clerical and other administrative support to the Panel. Additional resources may come from public and private contracts, cooperative agreements, grants and other appropriate sources, and may include contributions of money, products or services. The accounting of all resources regardless of size or form shall be according to generally accepted methods and shall be fully transparent.