

***Codes & Standards to Aid
Commercialization: Focus on
Materials Handling Equipment
using Fuel Cells and Related
Hydrogen Infrastructure***

The National
Hydrogen
Association

November 16, 2009

11/16/2009



Welcome!

- Karen Hall, Vice President of Technical Operations, the National Hydrogen Association
 - Welcome
 - Introductions
 - Review Agenda
 - Announcements

AGENDA

- 8:30 am – 8:40 am Welcome, Overview of the Agenda
(Karen Hall, NHA)
- 8:40 am – 9:10 am Codes and Standards – An Industry Perspective
(Aaron Harris, Nuvera Fuel Cells)
- 9:10 am – 9:40 am US Coordination and Model Codes Update
(Carl Rivkin, National Renewable Energy Laboratory)
- 9:40 am – 10:00 am International Standards for Materials Handling
(Kelvin Hecht, Consultant)
- 10:00 am – 10:15 am Q&A
- 10:15 am – 10:30 am Break

AGENDA - Continued

- 10:30 am – 10:55 am SAE Overview and Plans for Fork Lifts
(Jesse Schneider, Proton Motor)
- 10:55 am – 11:20am UL 2267- Fuel Cell Power Systems for
Installation Into Industrial Electric Trucks
(Laurie Florence, Underwriters Laboratory)
- 11:20 am – 11:45 am Hydrogen and Fuel Cell Applications
Components-Infrastructure
(Julie Cairns, CSA Standards)
- 11:45 am – 12:15 pm Indoor Refueling Experience and Code
Compliance
(Dan Rabun, Air Products)
- 12:15 pm – 12:30 pm Q&A and Wrap up

Workshop Purpose

- Facilitate an interactive dialog between the hydrogen industry, SDOs and code enforcement officials
- Discuss technical issues
- Discuss the market opportunities and case studies relating to fuel cell forklifts and the related refuelling operations.
- Learn about applicable codes, standards and recommended practices and the planned revisions to address the growing materials handling market.

NHA Membership

- Over 80 Members
- Diverse Membership
 - Large Companies
 - Small Businesses
 - Universities, Institutes, National Labs
- Dedicated to commercializing hydrogen-related energy systems

NHA C&S Process

- Identify areas where codes and standards for the safe use of hydrogen energy systems are needed
- Determine if adequate codes and standards exist
- Identify other stakeholders and expertise
- Facilitate the development of new draft standards through the appropriate SDO/CDOs by highlighting need and providing experts as appropriate.

Open Process

- The NHA Codes & Standards Activities are open to all interested parties
 - Safety is not proprietary
- NHA seeks to assist SDOs in the development of hydrogen energy system codes and standards that have broad industry consensus.
- The NHA supports open dialog in forums such as this Short Course



Q&A



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Final Thoughts

- Significant progress in being made in the development of codes and standards for hydrogen energy systems.
- NHA will continue to provide technical expertise and keep interested parties informed
 - Monthly electronic H2 C&S newsletter- The Hydrogen Safety Report
<www.hydrogenandfuelcellsafety.info>
 - Published proceedings

Hydrogen Safety Codes and Standards Short Course

Our sponsors:

**U.S. DOE Office of Hydrogen, Fuel Cells
and Infrastructure Technologies**



Thanks!