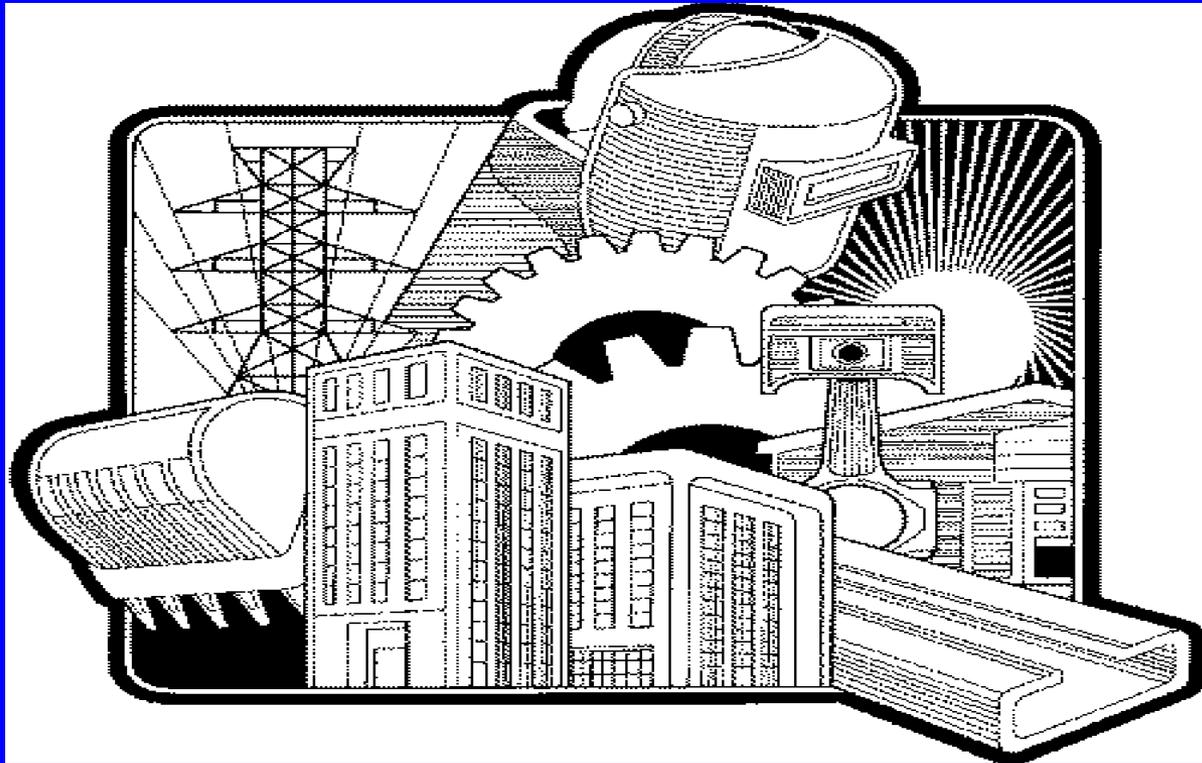


An Overview of NFPA's Hydrogen Requirements



DOE Fuel Cell Summit VII

College Park, MD

May 29, 2003



Presenter

- Carl Rivkin, P.E.
- Project Manager NFPA Hydrogen Coordinating Group
- 617-984-7418 or
- crivkin@nfpa.org

NFPA- What it is and does

- Non-profit association founded in 1896
- Provides full range of fire and safety programs
- Develops codes & standards - volunteer based
- 75,000 Members & 300+ Staff
- 220+ Committees
- 300+ Codes & Standards
- www.nfpa.org
- www.nfpa.org/ECommittee/HCGroup/HCGroup.asp

The NFPA Process

- Revision process closely mirrors regulatory revision process
- Call for proposals
- Committee review of proposals
- Report on Proposals published
- Call for Comments/committee review
- Vote by NFPA membership
- Issuance by NFPA Standards Council

Existing NFPA H₂ Codes and Standards

1. *NFPA 50A Standard for Gaseous Hydrogen Systems at Consumer Sites 1999 Edition*
 2. *NFPA 50B Standard for Liquefied Hydrogen Systems at Consumer Sites 1999 Edition*
 3. *NFPA 853 Stationary Fuel Cell Power Plants 2003 Edition*
- *NFPA 70 National Electric Code® Article 692 2002 Edition*

Projects Underway to Expand Hydrogen Requirements

- Expansion of NFPA 52 Compressed Natural Gas (CNG) Vehicular Fuel Systems Code 2002 Edition to cover Hydrogen.
- *NFPA 55 Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks 2003 Edition*

The NFPA Hydrogen Coordinating Group (HCG)

- Compare the existing NFPA hydrogen safety requirements to the needs of the hydrogen infrastructure and determine where there are gaps.
- Form work groups to develop the needed requirements

The NFPA Hydrogen Coordinating Group (HCG)

- 1. Metal Hydride Storage and Generation
 - 2. High Pressure Storage/Composite Material for Storage/High Pressure Handling and Utilization)
 - 3. Hydrogen Siting (including electrical classification, rooftop siting, and offset distances)
 - 4. Below Grade and Mounded Storage
 - 5. Emergency Power generation
-

The NFPA Hydrogen Coordinating Group (HCG)

- 6. C³® Code Set
 - 7. Methanol Usage
 - 8. Hydrogen Venting (Size and Location of Vents)
 - 9. Hydrogen Piping and Utilization (including building ventilation)
 - 10. Hydrogen Detection and Protection (Sensing and Control Devices)
-

Potentially Affected Documents

- 1. *NFPA 55 Standard for the Storage, Use, and Handling of Compressed Gases and Cryogenic Fluids in Portable and Stationary Containers, Cylinders, and Tanks*
- 2. *NFPA 52 Vehicular Fuel Systems Code*
- 3. *NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages*
- 4. *NFPA 853 Stationary Fuel Cell Power Plants*
- 5. *NFPA 5000™ Building Construction and Safety Code*

Potentially Affected Documents

- 6. *NFPA 497 Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas*
- 7. *NFPA 70 National Electric Code® Article 692*
- 8. *NFPA 110 Standard for Emergency and Standby Power Systems*
- 9. *NFPA 111 Standard on Stored Electrical Energy Emergency and Standby Power Systems*

The Future

- NFPA would like the views of all interested parties heard and encourages them to participate in the process of creating hydrogen safety requirements in the NFPA codes and standards