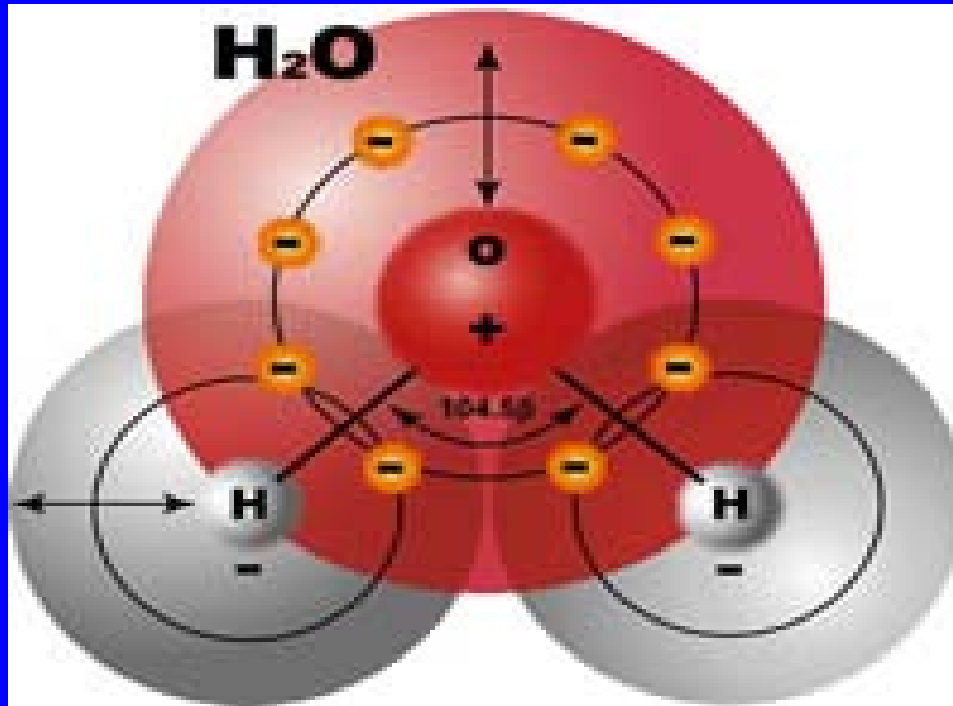


# NFPA 52 Vehicular Fuel Systems Code Sensor Requirements



## Hydrogen Sensor Workshop

April 15, 2007



# NFPA 52 Vehicular Fuel Systems

## Code 2006 Edition

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- Chapter 1 Administration
- 1.1.3 This code shall apply to the design, installation, operation, and maintenance of compressed hydrogen (GH<sub>2</sub>), liquefied compressed hydrogen (LH<sub>2</sub>), and blends of hydrogen up to 20 percent with the balance natural gas (NG) vehicle fueling (dispensing) systems and engine fuel systems and facilities.

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- Chapter 3 Definitions
- 3.3.47.3 Gas Detection System. One or more sensors capable of detecting natural gas or hydrogen at specified concentrations and activating alarms and safety systems.

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- Chapter 5 General GH2 Requirements and Equipment Qualifications
- 5.2.1 The following systems and system components shall be listed or approved:
  - .....
  - .....
  - (9) Gas detection equipment and alarms

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- Chapter 9 GH2 Compression, Gas Processing, Storage, and Dispensing Systems
- 9.2.2.3 All dispensing and storage facilities shall be certified as meeting the requirements of this document by qualified engineer(s) with expertise and competence in the design, fabrication, and construction of hydrogen containers, cryogenic equipment, piping systems, site fire protection and gaseous detection, emergency shutdown provisions, isolation, drainage, site spacing, fire protection equipment, safe operating procedures, worker safety, and other components of the facility.

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- 9.2.16\* A hazard analysis shall be conducted on every hydrogen fueling system installation by a qualified engineer(s) with proven expertise in hydrogen fueling systems and installations.
- 9.2.16.1 The hazard analysis shall include the following fire protection measures: fire protection and suppression systems, detection systems, and ventilation.

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- 9.3.3.5.4 Room Ventilation.
- 9.3.3.5.4.1 Ventilation shall be by a continuous mechanical ventilation system or by a mechanical ventilation system activated by a continuously monitoring hydrogen detection system where a gas concentration of not more than one-quarter of the lower flammable limit is present.

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- Chapter 14 LH2 Fueling Facilities
- 14.2.1.5 Designers, fabricators, and constructors of LH2 fueling facilities shall be competent in the design, fabrication, and construction of LH2 containers, cryogenic equipment, loading and unloading systems, fire protection equipment, hydrogen detection, and other components of the facility.



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- 14.3.7 Off-loading site fire detection and fire protection shall be provided. The fire detection system shall be capable of detection at multiple locations beyond the full radius of the transfer hose, measured at each point of transfer and receipt of LH2.

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- Questions?
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