

# Hydrogen and H-CNG System Installation codes for India

**Ambrish Mishra**  
**Director (Marketing Operations)**  
**Oil Industry Safety Directorate**

# Statutory Regulations

- **EXPLOSIVES ACT (SMPV, Gas Cylinder Rules etc)**
- **PETROLEUM RULES**
- **FACTORY RULES**
- **INDIAN ELECTRICITY RULES**
- **ENVIRONMENT ACT**
- **PNGRB**

# Development of Code for India

**Statutory Code STD-179 Available for CNG Refueling station**

➤ **“Code for HCNG Dispensing station” in progress**

**•Progress:**

-Committee headed by Prof L.M.Das – Jan 2009

-Draft- code(STD-179 Ext) for HCNG with 20% H<sub>2</sub> (Gaseous) on stand alone basis is ready for deliberation

**Target for Completion – December 2009**

# Areas for Analysis/Actions

- **Properties of HCNG ( 20% H<sub>2</sub> )**
- **Co-existence of other Auto Fuel in dispensing station**
- **Local conditions**
- **Provisions in Motor Vehicle Rules**
- **Consumer and Public Awareness**

# Properties of HCNG ( 20% H<sub>2</sub> )

✓ **Enough Data available For Hydrogen**

✗ **Inadequacy of Authentic data (MSDS) for HCNG**

➤ **Arrangements with ISRO**

# Co-existence of other Auto Fuel in dispensing station

- **STD-179 applicable with Retail Outlet for MS/HSD**
- **Risk evaluation for HCNG**
- **Accidental Release of H<sub>2</sub> During**
  - On site manufacture
  - On site storage
  - Dispensing
  - Vehicle

# Risks to be addressed

- **Accidents Involving :**
  - **Undetected leak**
  - **Piping and Pressure Vessel Failure**
  - **Inadequate inert gas purging**
  - **Vent and exhaust system accidents**
  - **Electrical Short-circuits**
  - **Leakage thru joints**
  - **Reaction with containment**
  - **Release of Hydrogen**
  - **Failure of SRV (s)**

# Further Actions Required

- **Amendments to Motor Vehicle Rules**
  - **Training**
  - **Infrastructure development for Retro fitment**
  - **Consumer and Public Awareness**
- **Validation of Product Specification**
- **Notification for HCNG for Vehicle Fuel (MOPN&G)**
- **Amendment to SMPV**

**Thank  
you**

