



**GUJARAT GAS**



## **CNG Station Safety**

**2<sup>nd</sup> Knowledge Sharing Workshop for CGD entities**

**14<sup>th</sup> February 2022**

# CNG Stations - Gujarat Gas Limited

GGL has 623 CNG stations across its operation areas as on February 2022.

Type of CNG stations	Number of CNG stations
Daughter Booster	241
Daughter station	96
L-CNG	1
Mother	63
Online	222
<b>Grand Total</b>	<b>623</b>

# Photo of GGL COCO CNG Station



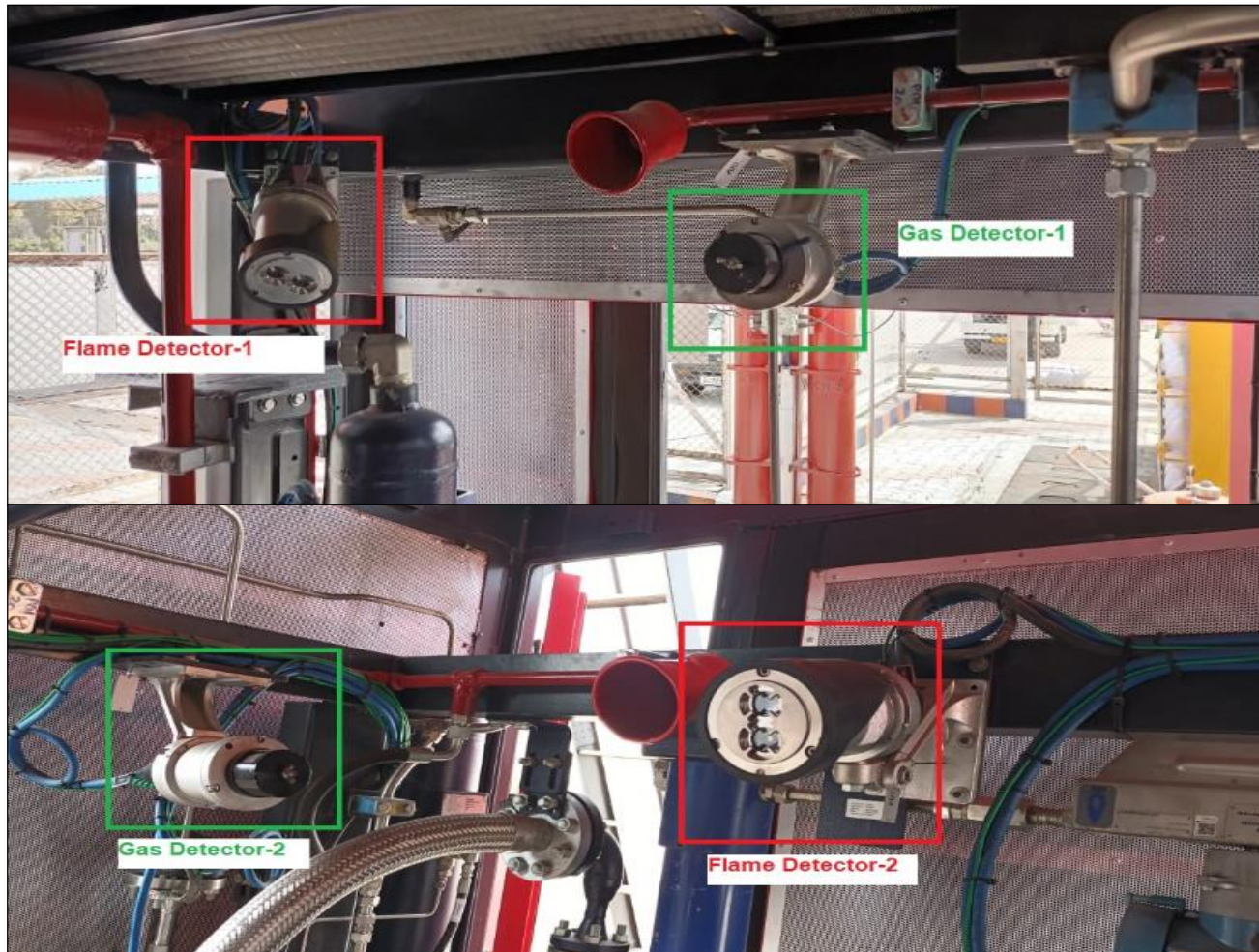
# Safety features of CNG Station at Gujarat Gas Limited

1. Safety Engineering studies carried out of each CNG station as per Gas Cylinder Rules 2016 :

- HAZOP study:- Hazard and operability (HAZOP) studies
- QRA study :- Quantitative Risk Assessment
- EMERA :- Escape Muster Evacuation & Rescue Analysis Report
- HAC :- Hazardous Area Classification Report

# Safety features of CNG Station at Gujarat Gas Limited

## 2. CNG Compressor's enclosure with 2 Gas Detector and 2 Flame detector :-



2 Gas detectors inside compressor's enclosure to detect any gas leakage and to trip compressor.

2 flame detectors inside compressor's enclosure to detect flames / fire inside the compressor and compressor and to trip the compressor on detection of flame and automatic discharge of CO<sub>2</sub> gas from the cylinder simultaneously

# Safety features of CNG Station at Gujarat Gas Limited

## 3. Dedicated CO2 flooding type fire fighting system for CNG Compressor:-



### CO2 flooding system

CO2 flooding type fire fighting system is placed outside the package enclosure for CNG compressor which can be operated manually as well automatically on detection of flame / fire

# Safety features of CNG Station at Gujarat Gas Limited

## 4. CNG Dispensers with safety features for safe filling at CNG station

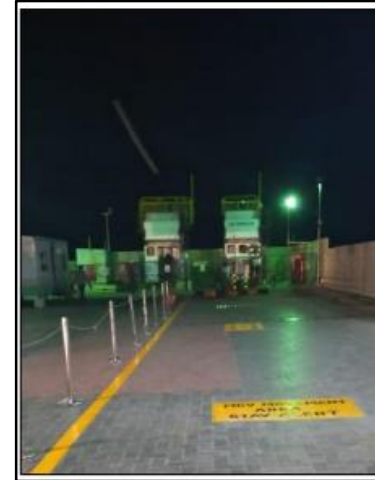
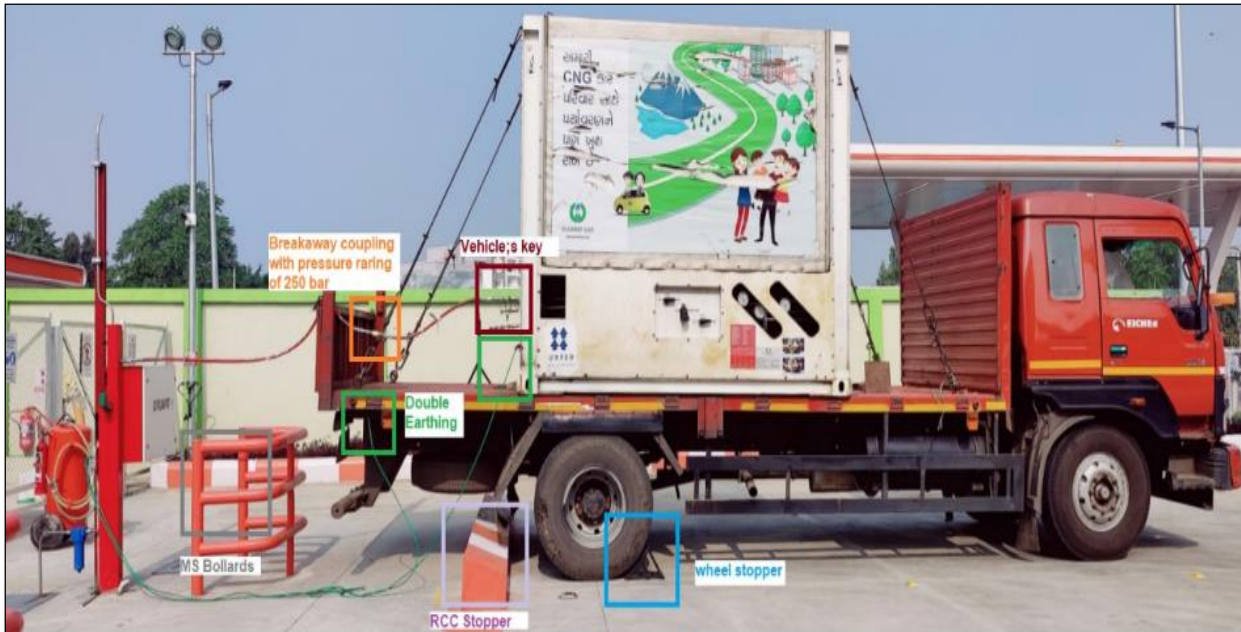


### Break-away coupling for Filling hose & Vent hose:

2 nos of breakaway couplings with the pressure rating of 250.0 bar (3500 psi) for each Fill line's hose and Vent line's hose having gas flow blocking arrangement while decouple of the hose due to any reason to avoid incident/damage of CNG dispenser and CNG vehicle

# Safety features of CNG Station at Gujarat Gas Limited

## 5. Mobile Cascade Vehicle (MCV)'s Filling post for CNG Loading/ Unloading :-



- Break-away coupling for fill's hose.
- Double Earthing for MCV vehicle and Cascade.
- Put / remove the vehicle ignition key.
- Reverse Camera
- Marking of MCV movement path inside CNG Station

# Safety features of CNG Station at Gujarat Gas Limited

## 6. Verification of on board's CNG cylinder testing validity before filling & Rejection :-



- 1. Validity of CNG cylinder within test life** is checked by verifying R.C.Book or metal plate or cylinder hydro-test certificate.
- 2. Details of rejected vehicles** is recorded & maintained in CNG Vehicle Cylinder Rejection report
- 3. Ensure that Battery terminals** of the CNG vehicle to be filled are not in contact with the CNG filling hose. Ensure use of **Insulation Pad/Rubber** Mat in case battery terminal is near to filling nozzle /Hose.

# Safety features of CNG Station at Gujarat Gas Limited

## 7. Training of CNG Staff



**On Job Training – CNG Filler**

Geographical Area: Pharwad Road, Gandhinagar, Gandhinagar  
 Name of CNG Station: Western Zone Gandhinagar  
 Type of CNG Station: Station

Training has been provided for safe CNG filling including below practices with the trainees:

Sl. No.	Safety & Operational Practices	Assessment
1	Pre-arrival parking of vehicle, Parking brake applied & engine of the vehicle is switched off	<input type="checkbox"/>
2	Check Head Pressure valve, pressure regulator on the vehicle is functional	<input type="checkbox"/>
3	Inspecting the site for safety and ensure that the vehicle is parked in the designated area	<input type="checkbox"/>
4	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
5	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
6	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
7	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
8	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
9	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
10	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>
11	Check the CNG filling nozzle, check working on CNG system work for testing and maintenance	<input type="checkbox"/>

Participant Declaration: We have understood and are aware of the topics discussed and mentioned above.

Sl. No.	Participant's Name	Signature
1	<u>સુભાષી સુભાષી</u>	<u>[Signature]</u>
2	<u>સુભાષી સુભાષી</u>	<u>[Signature]</u>
3	<u>સુભાષી સુભાષી</u>	<u>[Signature]</u>
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8	<u>સુભાષી સુભાષી</u>	<u>[Signature]</u>

Name & Sign of the Trainer: [Signature]  
 Sign & Stamp of HO/Divisional/Regional Manager: [Signature]

### Station In-Charge/Supervisor & CNG Compressor Operator:

- Competency Training + Basic safety Training – through external agency
- Practical Fire Fighting Training
- First Aid Training through external agency

### CNG Filler (DSM)

- CNG filling competency training including Basic safety through External Agency
- Practical Fire Fighting Training
- On Job Training (OJT) for Safe CNG Filling – once every six months

### MCV Drivers

- Hazardous Goods Transportation Training by authorized agency
- Defensive Driving Training by external agency
- Practical Fire Fighting Training

Thanks