



**WELCOME TO PRESENTATION
ON
SAFETY PRACTICES IN IGL**





IGL – AT A GLANCE

Incorporated in 1998 as a joint venture of GAIL (India) Ltd., BPCL and Govt. of NCT of Delhi.

Present Status:

- Annual Sales Turnover ~ Rs 4328 crores in FY 13-14
- Pipeline network ~ 9205 kms
 - Steel - 655 Kms
 - MDPE - 8550 kms
- Average Sales ~ 3.99 MMSCMD
- Catering to ~ 4.8 lakh PNG Customers
 - Domestic - 4.77 lakh
 - Commercial - 1761
 - Industrial - 833
- Total CNG vehicles - 7.35 lakh
- Total CNG Outlets - 325 nos.



Prevalent Safety Practices in IGL

Safety:

- Safety is followed in Design, Construction and Operation of all Activities.
- The CNG Stations are designed as per Best National & International Codes and Standards.
- Safety - Accorded Top Priority by Management and is the Top Agenda during all review meetings. All board meeting starts with review of safety performance every quarter.
- Documented & regularly revised Safety Management System of IGL exists comprising following key elements:
 - Health, Safety & Environment Policy
 - Compliance to all Statutory requirements
 - Safe Operating Procedures
 - Safety Work Permit System
 - Personnel Protective Equipments (PPE)
 - Emergency Response Disaster Management Plan - Accredited
 - Accident/ Incident Reporting and Investigation procedures
 - Safety Awareness Programs
 - Safety Training
 - Audits (External / Internal)
 - Safety Committee Meetings
 - Emergency Drills
 - Annual Health Checkup



Prevalent Safety Practices in IGL

Operation & Maintenance:

- The O&M activities of 9200 kms pipeline network, 325 CNG stations feeding 12 lakh customers in Delhi & NCR are managed by 24X7 manned 8 nos. CNG & 34 nos. PNG control rooms with trained, experienced and qualified personnel, strategically located in various geographical areas to ensure minimum response time.
- All O&M activities are carried out in line with best national & international codes & practices. Condition monitoring of machines is done quarterly to audit the healthiness of the system.
- Safety & Technical Competency Training is imparted internally as well as through certified third parties along with the Live Fire Fighting Training before deploying on duty with periodical refresher trainings.
 - IGL Employees - One Day Module (Annually)
 - Contract Staff - Two Day Module (Annually), Refresher (Quarterly)
- Surprise Safety Checks / Audits (Everyday about 30 nos. sites) are conducted to ensure compliance of Safety Work Permit System and safety requirements.



Prevalent Safety Practices in IGL

- Steel Pipeline network is designed for maximum operating pressure of 48 bar, however IGL is operating at 26 bar and below.
- Emergency isolation is available through Sectionalizing Valves at every 3 kms of steel pipeline network.
- Proper coordination is maintained with statutory authorities, Public & Private Utilities for working in the vicinity of IGL's pipeline network.
- Markers for gas pipeline identification are provided at every 50 to 100 mtr.
- Monthly monitoring of IGL steel pipeline network is done for corrosion protection. Corrosion surveys are conducted to check the integrity of steel pipeline coating.
- All incidents are thoroughly investigated and analyzed to find the root cause to avoid recurrence.
- Standard Operating Procedures are well documented, displayed, followed and timely reviewed.



Prevalent Safety Practices in IGL

Safety Audit:

- Third Party (External) - Once in 3 years
- Internal - Once in a year

Observations and recommendations are complied in a timely manner.
Status reviewed monthly by MD and Quarterly by Board of Directors.

Isolation Valve Monitoring and Maintenance of Pipeline:

- Monitoring & Maintenance of Sectionalizing Valves - 48 Nos. on monthly basis.
- Monitoring & maintenance of Under Ground isolation valves - 431 Nos. on monthly basis.
- Functional Test of isolation valves on monthly basis.



Prevalent Safety Practices in IGL

Patrolling of Steel Pipeline:

- Round the clock patrolling of steel pipeline is being carried out by M/s MESCO in 17 sections (11 Sections in NCT & 6 Sections in NCR) with approx. 40 km per section with the help of 51 nos. of motor bike patrollers in NCT & NCR.
- Patrolling of steel pipeline network is being carried out to find out the third party activities in the vicinity of our pipelines, encroachment and to ensure the security of pipeline assets.
- Monitoring, supervision and guiding to third parties to carry out the work in the vicinity of IGL's steel pipeline as per the IGL approved policy.
- Round the clock security guards are available at 44 Nos. of SV stations and rest 4 SVs are located in IGL premises and DTC Depots.
- Vehicle Tracking System (VTS) is installed in all the patrolling bikes and the same is monitored at respective control rooms.
- All the patrolling guards are trained to operate the isolation valves in case of emergency and they are reporting to Zonal In-Charges on daily basis.



Risks involved with the CGD Industry

Validation of Cylinders

- Requirement of fool proof user friendly system to ensure the healthiness of CNG cylinders on-board and should be same at PAN India level.

Shortage of cylinder test facilities:

- Around 53 test facilities in India for more than 1.8 million vehicles.
- Hydrostatic test interval reduced from 5 years to 3 years.

Concerns

- Untested and unsafe cylinders is a matter of serious concern. As CGD industry is more than 15 years old and many vehicles are running with the cylinders of that age.
- Recent incidents of CNG cylinder failures during refueling in IGL, MGL & BGL have raised alarms.



- Incident type : Explosion
- Date of incident : 20.10.2012
- Location : IGL Delhi
- Cylinder Make : JAYFE Cylinders Ltd.
- Date of Manufacturing : August 2010 (Valid cylinder)
- Kit Fitment : Company fitted



- Incident type : Explosion
- Date of incident : 31.05.2014
- Location : IGL Delhi
- Cylinder Make : JAYFE Cylinders Ltd.
- Date of Manufacturing : August 2010
- Retested in 2013 (Valid Cylinder)
- Kit Fitment : Retro fitted



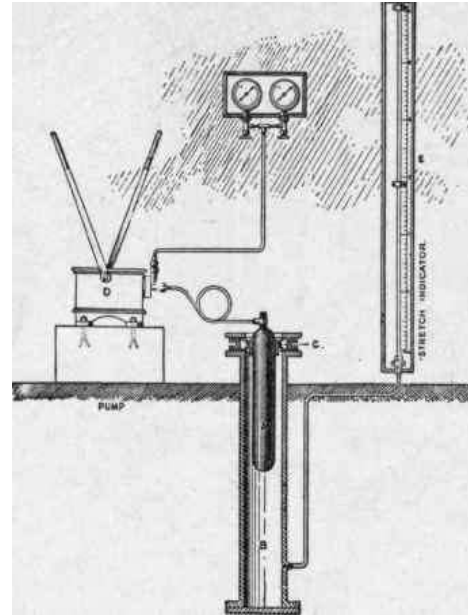


Delhi, Noida & Ghaziabad - CNG Infrastructure

Type of Vehicle	Total No. of Vehicle	No. of Cylinders per Vehicle	Total No. of Cylinders
Buses	16699	10 (approx.)	166990
Private Cars	489554	1	489554
RTV's / Light Passenger Vehicles	6813	4 (approx.)	27252
Autos	77751	1	77751
Taxis	34619	1	34619
Light Goods Vehicles	102300	1	102300
Heavy Goods Vehicles/ Medium Goods Vehicles	320	4 (approx.)	1280
Others (Phatphat, Gramin Seva etc.)	6259	1	6259
Cascades (IGL)	700		35000 (approx.)
TOTAL NUMBER OF CYLINDERS			9,41,005 (approx.)

Authorized Testing Center for Hydrostatic Testing of cylinders available in Delhi, Noida & Ghaziabad

- M/s Metro Cylinder Testing Co.
- M/s Jiolat Auto Gas Industries
- M/s Satyam CNG Cylinder Test House
- M/s Teesta Construction Pvt. Ltd.
- M/s Shiva Motors
- M/s Hitech CNG Cylinder Test House
- M/s Uttam Air Products Ltd.
- M/s Benzo Triana Cylinder
- M/s Shree Shyam Cylinder Testing Co.
- M/s Om Cylinder Testing Co.
- M/s Dayal CNG Cylinder Testing Station



Approximate testing capacity of all testing centers = ~440 Cylinders per day

Approximate Requirement more than 1000 cylinders/day



Risks involved with the CGD Industry

•CNG Kits & Cylinders:

- Although the CNG Kit comprises of CCoE approved Cylinders, Approved kit and fittings, however due to growing competition in the market chances of putting spurious components by lowering the cost of the kit is a matter of concern.
- Vehicles coming at CNG stations are exposed to highest working pressure and any failure causes gas leak & fire and if not controlled, it takes merely 6-7 minutes to engulf the whole station into flames. Even the state fire brigades take minimum 20 minutes to reach at site.
- Authenticity / Validation of CNG Cylinders – Onboard & Cascade

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[Slow motion 1st Camera.wmv](#)

○[20140715_105014.mp4](#)

[Slow motion 2nd Camera.wmv](#)

•Third Party Damages to Pipeline Network leading to gas leaks and fire

- Lack of coordination/ planning with other utility companies
- Unauthorized infrastructure development



Mitigation Measures adopted by IGL

- Validation of CNG cylinders is ensured by checking the Compliance Plates affixed in CNG vehicle before dispensing CNG. 📢
- Massive Safety Awareness is created among the customers through Safety Clinics, Safety films, Cautionary Boards, displaying banners and slogans, stickers, pamphlets, press, FM Radio and advertisements.
- Safety Clinics for CNG consumers are organized for checking CNG kits



- Safety awareness information is broadcasted through FM radio 📢

- Distribution of pamphlet of safety instructions/information to consumers

DEAR PNG CONSUMER


Know Your Gas..

- Natural gas is lighter than air, incase of leak vent upwards.
- Natural gas is colourless & odourless gas, however for your safety, an odourant is mixed for leak detection.

For Your Safety..

1. Please check your rubber tube for crack, damage and replace it regularly with SURAKSHA rubber tube.
2. Always keep the appliance valve (connecting gas supply through rubber tube) closed after use.
3. Incase of leakage, Don't switch on/off any electrical switch/appliance & for ventilation open doors & windows.

In case of Emergency , Please inform :



INDRAPRASTHA GAS LIMITED

Emergency No. : 8130995000, 8130995001

Toll Free No.: 1860-180-1817



INDRAPRASTHA GAS LIMITED

आपकी सुरक्षा हेतु

सीएनजी पर चल रहे प्रत्येक वाहन के पंजीकरण प्रमाणपत्र (आरसी) पर सीएनजी ईथन गैस का पृष्ठांकन (सेंसेसिटी) आवश्यक है।

सीएनजी फिट को प्रत्येक वर्ष एवं सिलेंडर को प्रत्येक तीन वर्ष पर टेस्ट करवाएं एवं प्रमाण पत्र साथ रखें।

गाड़ी के बैट्री टर्मिनल को कवर करना अनिवार्य है।



आपकी सुरक्षा हेतु



- सीएनजी फिट की मरम्मत आवश्यकता प्राप्ति कार्यवाही पर ही करवाएं।
- सीएनजी फिट को प्रत्येक वर्ष एवं सिलेंडर को प्रत्येक तीन वर्ष पर टेस्ट करवाएं एवं प्रमाण पत्र साथ रखें।
- सीएनजी पर चल रहे प्रत्येक वाहन के पंजीकरण प्रमाणपत्र (आरसी) पर सीएनजी ईथन गैस का पृष्ठांकन (सेंसेसिटी) आवश्यक है।
- वाहन में सीएनजी भरवाने से पूर्व वाहन की पार्की सीएनजी भरने वाले व्यक्ति को दे दें।
- गाड़ी में खुले / लगे तारों के कारण आग लग सकती है। गाड़ी की कार्रवाई अत्यंत आवश्यक हैं। गाड़ी के बैट्री टर्मिनल को कवर करना अनिवार्य है।
- सीएनजी निशान के समान वाहन को स्टार्ट न करें।
- सीएनजी स्टेशन में मोबाइल फोन का प्रयोग वर्जित है।



MEASURES ADOPTED FOR IMPROVEMENT IN THE AREAS OF SAFETY

Employees:

- Safety training is given to each employee at joining of the organization and refresher training is conducted every year
- Each employee has been made responsible to ensure safety at areas in its control and has been provided with required resources and authority to implement the same. (Attached HSE policy)
- Multi-discipline Core Safety Groups trained from NEBOSH, UK ensures implementation of Safety Management System.

SAFETY TRAINING STATUS FOR YEAR 2013-14

Sr. No.	Training Module	No of Programmes conducted	No of Participants
1	Employees	13	370
2	Domestic Consumers	100	1144
3	Small & Large Commercials & Industries	194	3147
4	School Bus Drivers & Maintenance Staff	72	1381
5	&M and Project Staff	1235	9772
6	CNG Consumers	61	1725
7	Oil Marketing Companies (RO)	132	1098
8	Drivers & Maintenance Staff	52	1541
9	Internal Safety Competency Training to DSMs	2512	34872
	External Safety Competency Training to DSMs	225	5877
Total		4596	60927



Contract Workers:

- Qualification, skill and experience requirement has been included in BQC of tender document.
- Safety and competency training is imparted to all contract workers and refresher training is conducted regularly.
- Supervision and monitoring of contractual staff is ensured through certified, trained and experienced contractor supervisors.

INITIATIVES FOR CONSUMER SAFETY

- Mobile training van is designed to effectively address safety training needs for various target groups at their premises.
- Mobile training van is equipped with all latest training aids and live fire fighting demo module.



- State of the **Art Fire Fighting arrangements** are provided for CNG and PNG installations as per relevant codes and Standards.



CO2 Flooding System
High Capacity DCP



DCP System (Bus Dispensers)



System (for Cascades)



High Pressure Water Mist Cum
Foam System



Highly Advanced Laser Gas Detectors
Being Procured for Leak Detection



- **Emergency Response Vehicles 02 nos.** are stationed at strategic locations to handle emergencies more efficiently having advanced rescue tools and equipments.



- **Emergency Control Centers** are set up at strategic locations in Delhi/ NCR region along with Emergency Response Vehicles to cater emergencies in minimum response time.



IGL has a well defined Emergency Response and Disaster Management Plan (ERDMP) duly approved by PNGRB, regularly rehearsed by Mock Drills.

MOCK DRILLS (Frequency):	Level – I	-	Monthly
	Level – II /III	-	Annually

Major Mock Drills along with State and Central Government Agencies like DDMA, MCD, BSES, Civil Defence, NDMA, NDRF, Govt. Hospitals, Delhi/UP Police & Fire Service, etc. are conducted to check IGL's preparedness for any Level-2 / 3 emergency.

PHOTOGRAPHS OF RECENT MOCK DRILL CONDUCTED ON 9th MAY 2014



THANK YOU

