



MAHARASHTRA NATURAL GAS LIMITED

A JV of GAIL (India) Ltd & BPCL



Warm Welcome!!!

***Presentation
On***

***“Safety Practices for CGD Entities”
17 July 2014***

By :MNGL, PUNE



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PREVALENT SAFETY PRACTICES IN CGD SECTOR



Safety in Design

Safety in Laying

Safety in O&M

THREE TIERS OF SAFETY



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DESIGN STDS PROVIDING INBUILT SAFETY IN CGD

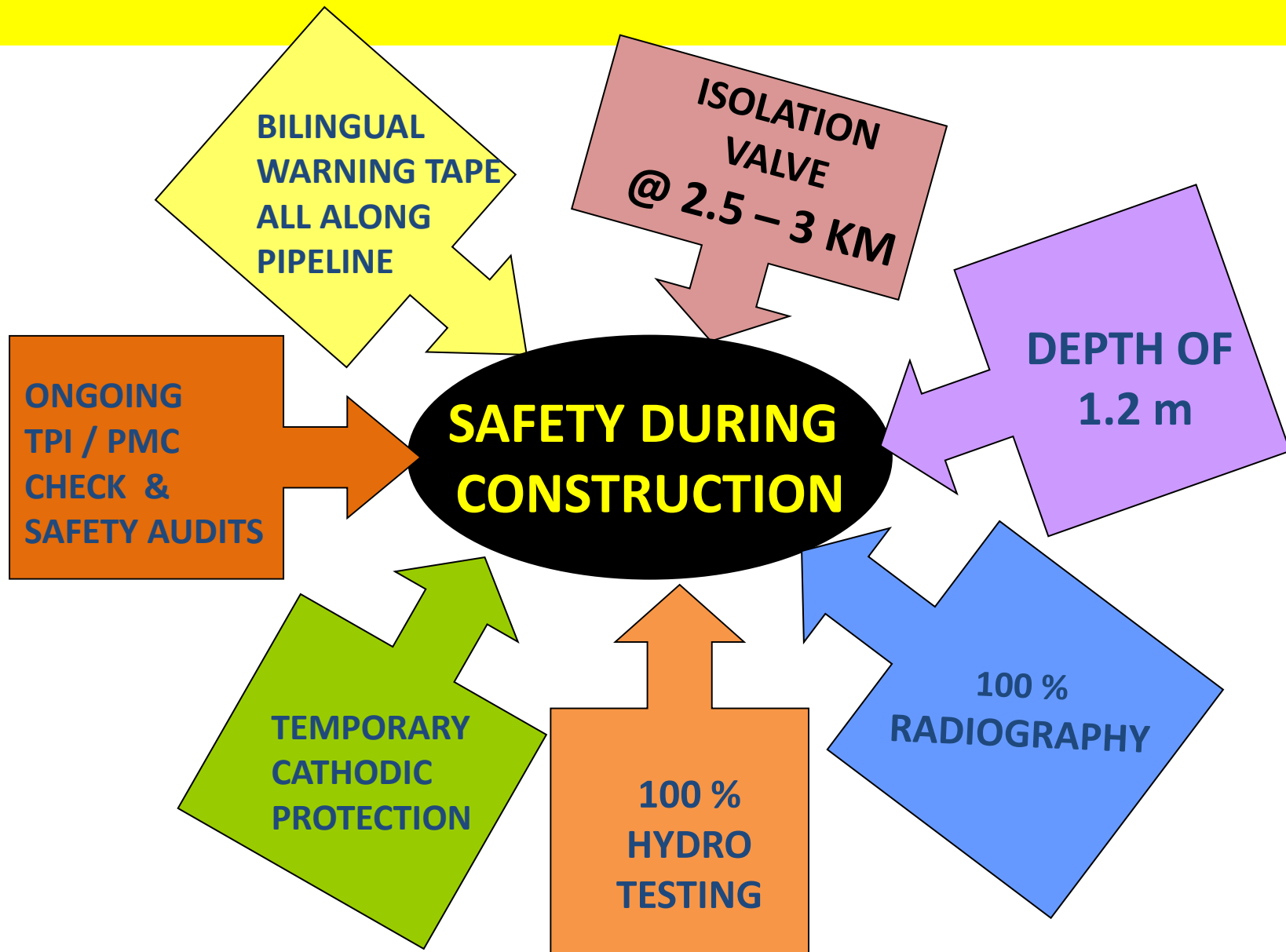
- DESIGN AS PER ASME B 31.8
- COMPLIANCE TO RELEVANT API STDS
- COMPLIANCE TO RELEVANT OISD STDS (226, 169,105)
- COMPLIANCE TO RELEVANT IS STDS
- 1 MM CORROSION ALLOWANCE
- 3 LAYER PE COATING
- TWIN STREAM DRS FOR INDUSTRY SUPPLY





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CONSTRUCTION



OPERATIONS

**TRIPARTITE CHECKLIST
(PROJECTS, SAFETY AND O&M)**

CLOSE OUT OF PUNCH POINTS.

**PROPER HANDOVER / TAKE OVER OF ASSETS
WITH ALL DOCUMENTS & TEST REPORTS**





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SAFETY DURING OPERATION

24 X7 HRS CONTROL ROOM OPERATION

CP MONITORING MONTHLY PSP & ANNUAL CIPL & DCVG SURVEY

PIPELINE PATROLLING : DAILY & SIX MONTHLY FOOT PATROLLING

COORDINATION WITH LOCAL AUTHORITIES

24X7 EMERGENCY VAN WITH CREW & SPARES

ADHERENCE TO ANNUAL MAINTENANCE SCHEDULE

QUARTERLY SV PERFORMANCE TEST & MAINTENANCE

MARKER ADEQUACY SURVEY

GAS RECONCILIATION AND ANNUAL LOCK PRESSURE TEST / LEAK SURVEY



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COMPLIANCE OF SOPs IN CGD OPERATIONS

AVAILABILITY OF WRITTEN SOPs AND STANDARD FORMATS

AREA WISE CONTROL ROOM FOR QUICK RESPONSE

24/7 CONTROL ROOM SET UP WITH EMERGENCY VEHICLE AND CREW

DISPLAY OF EMERGENCY NUMBERS, SIGNAGE, DO'S AND DON'TS

ETHYL MERCAPTAN DOSING & ONLINE MONITORING

SAFETY AND TECHNICAL COMPETENCY TRAINING

PERIODIC INSPECTION/TESTING / CALIBRATION

THICKNESS TESTING AND COATING INTEGRITY SURVEY

MOCK DRILLS AT REGULAR INTERVALS

WORK PERMIT SYSTEM IN PLACE

REGULAR PSP MONITORING ALONG WITH DCVG, CIPL SURVEY

ERDMP AS PER PNGRB NORMS IN PLACE

INCIDENT REPORTING & CAPA ANALYSIS





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RISKS INVOLVED IN CGD & MITIGATION MEASURES

MAJOR GAS LEAKAGE IN
CGD NETWORK

MAJOR FIRE IN CGD
NETWORK

EMERGENCY IN PNG
CUSTOMER LOCATION

FIRE/EXPLOSION AT CNG
STATION

LCV ACCIDENT

- CGD NETWORK DRAWINGS, SITE PLAN /LOCATION
- PATROLLING AND SECURITY THREAT PLAN
- REGULAR CP MONITORING
- FIRE FIGHTING FACILITY
- MUTUAL AID AND RESPONSE GROUP
- MATERIAL SAFETY DATA SHEET
- ODOURISATION AND ONLINE MONITORING
- LIASIONING WITH LOCAL AUTHORITIES
- RESOURCE DIRECTORY AND MOBILISATION
- REGULAR LCV INSPECTION
- COMMUNICATION FLOW CHART
- EMERGENCY ORGANISATION CHART
- LOCK PRESSURE TEST





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RISKS INVOLVED IN CGD & MITIGATION MEASURES

THIRD PARTY
ENCROACHMENT/DAMA
GE LEADING TO GAS
LEAKAGE/FIRE

PIPELINE COROSSION

FAULTY FITTING,
MATERIAL AND
WORKMANSHIP

SPURIOUS CNG
CYLINDERS CAUSING
FIRE/EXPLOSION AT CNG
STATION

ILLMAINTAINED
LCV LEADING TO
ACCIDENT

- CGD NETWORK DRAWINGS, SITE PLAN /LOCATION
- PATROLLING AND SECURITY THREAT PLAN
- EARTHING
- CCTV SURVEILLANCE
- REGULAR CP MONITORING
- FIRE FIGHTING FACILITY
- MUTUAL AID AND RESPONSE GROUP
- MATERIAL SAFETY DATA SHEET
- ODOURISATION AND ONLINE MONITORING
- LIASIONING WITH LOCAL AUTHORITIES
- RESOURCE DIRECTORY AND MOBILISATION
- REGULAR LCV INSPECTION
- COMMUNICATION FLOW CHART
- EMERGENCY ORGANISATION CHART
- LOCK PRESSURE TEST
- RANDOM PNG AUDITS



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PNGRB ISSUED GUIDELINES/ STANDARDS ON SAFETY

Technical
Standards (T4S)
&
Specifications
including
Safety Standard
for Natural Gas
Pipelines, 2009

- Material & Equipment
- Welding Procedures
- Piping & fitting details
- Design Installation & Testing
- O & M Procedures
- Corrosion Control
- Compliance audit carried out from PNGRB authorised agencies (M/S Bureau Veritas & M/S Quality Safety Service)



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PNGRB ISSUED GUIDELINES/ STANDARDS ON SAFETY

Emergency Response & Disaster Management Plan
ERDMP Regulations 2010.

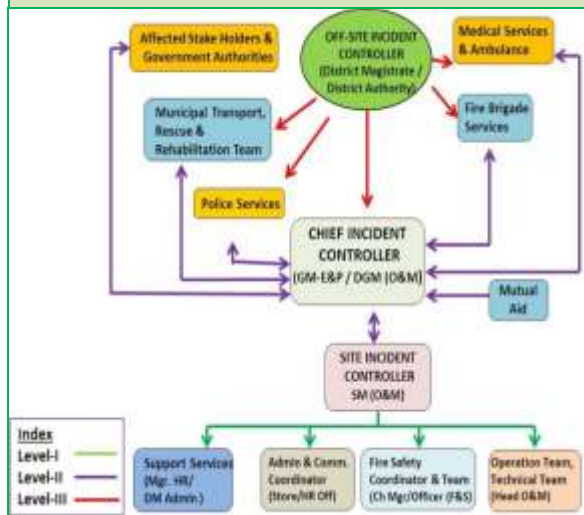
Complied and Accreditation obtained from PNGRB
authorized agency

(M/S Disaster Management Institute, Bhopal)

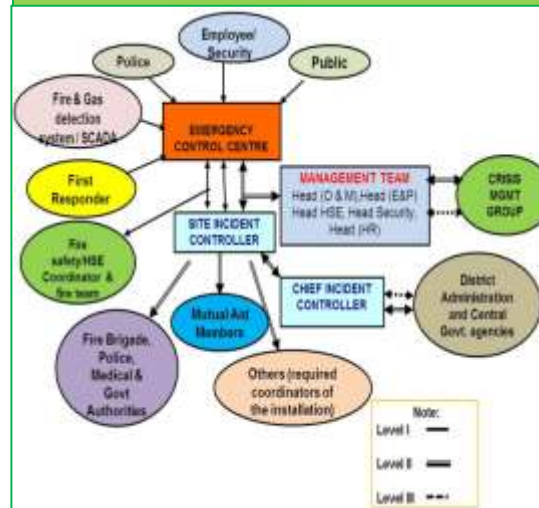


DILIGENT PREPARATION + ORGANIZED RESPONSE
= SUCCESSFUL RECOVERY

EMERGENCY ORGANIZATION CHART



COMMUNICATION FLOW CHART





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PNGRB ISSUED GUIDELINES/ STANDARDS ON SAFETY

**INTEGRITY
MGMT.
SYSTEM
FOR
NATURAL
GAS PIPELINE
REGULATION
2012.**

- CATHODIC PROTECTION INSPECTION - COMPLIED
- INTELLIGENT PIGGING (NOT APPLICABLE TO CGD)
- GROUND SURVEILLANCE - COMPLIED
- HYDRO TESTING - COMPLIED
- GIS MAPPING IMPLEMENTATION - COMPLIED
- LEAK DETECTION SYSTEM – REGULAR COMPLIANCE



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Thank You

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FOCUS AREA

Third party encroachment

Unauthorized connection, Tapings, Geysers

Cylinder testing

Sharing of case studies

Limited expertise





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Patrolling

Daily patrolling by agency

Foot patrolling with leak survey (six monthly schedule)

Leak survey as and when required

