



# 07<sup>th</sup> Workshop on Capacity Building of PNGRB-Empanelled Third Party Inspection Agencies

February 24, 2025



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VERITAS**

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## *About Bureau Veritas*

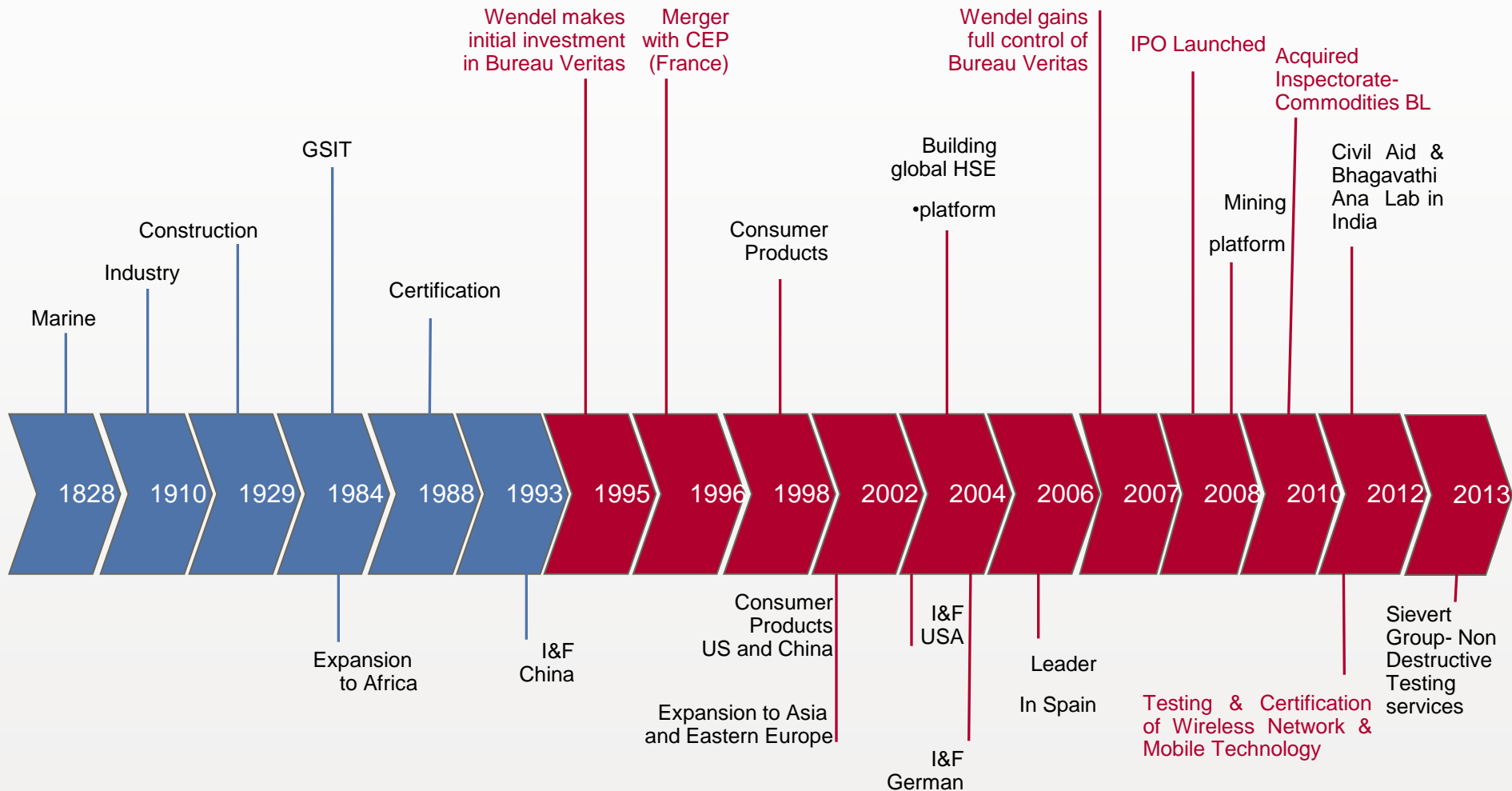


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# What we do



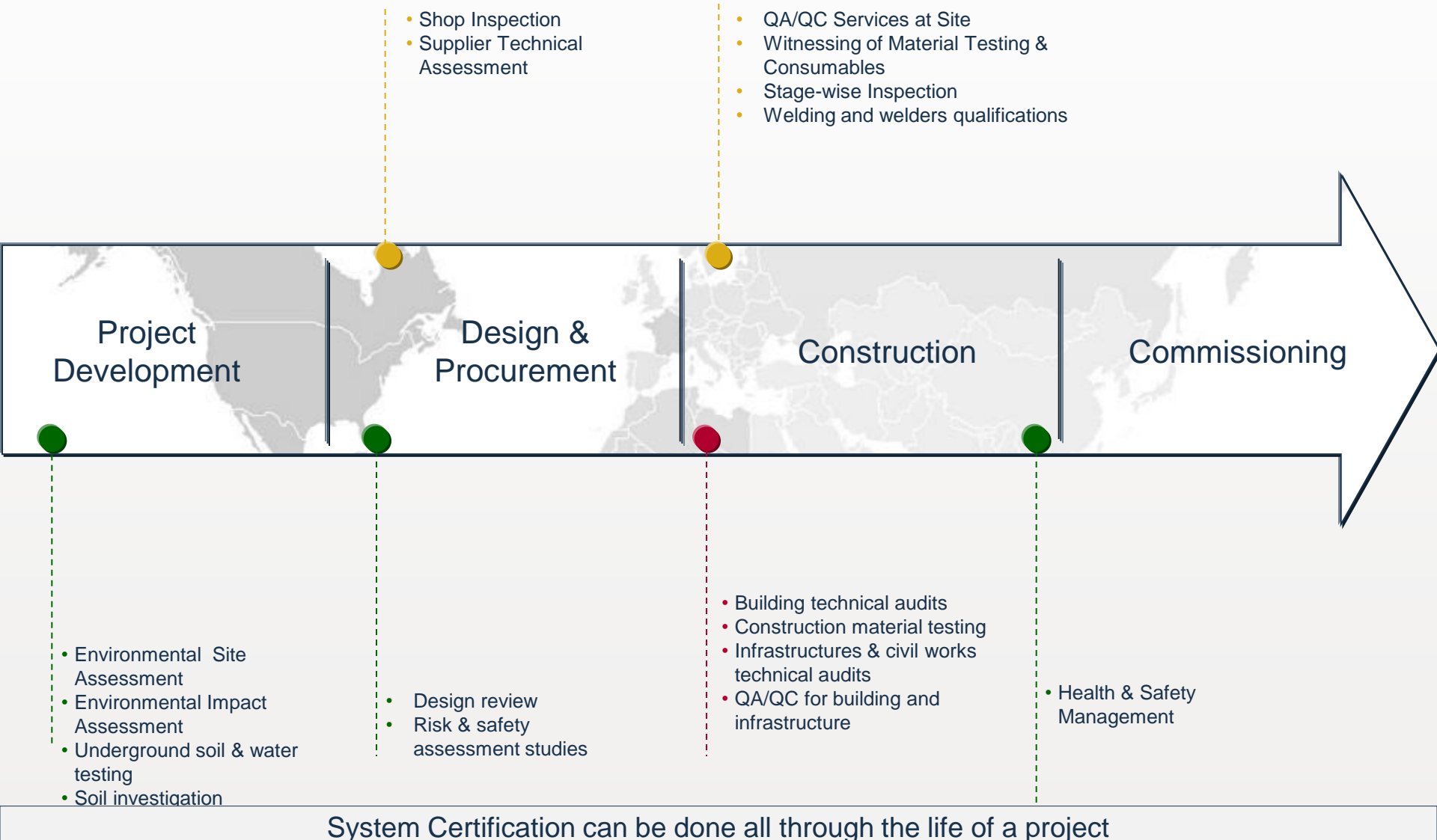
# Bureau Veritas History



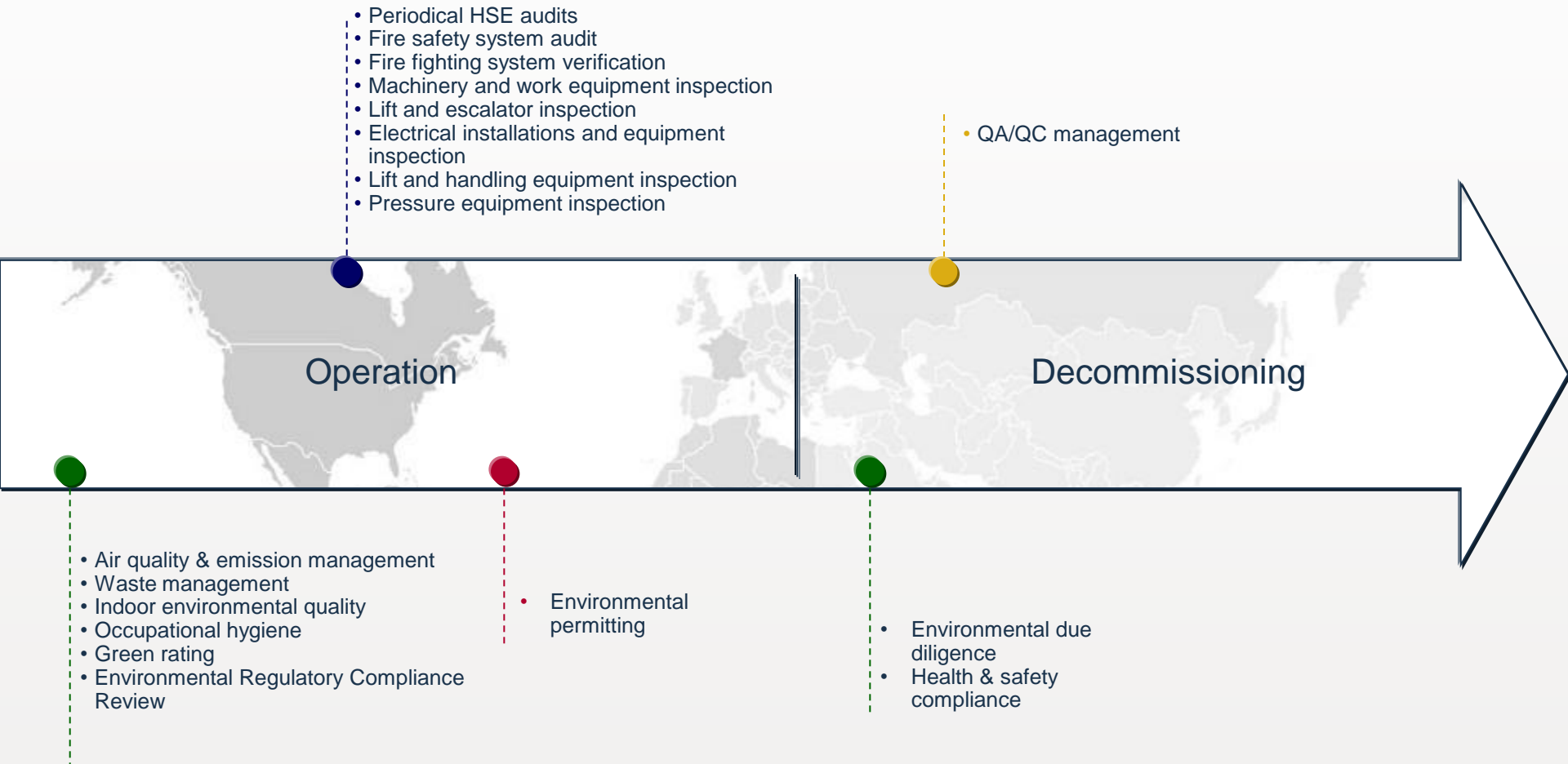
•Reputation, network and portfolio of businesses built over 180+ years

•Note: GSIT = Government Services & International Trade division. I & F = Industry & Facilities division. IPO = Initial Public Offering (Listing on the Euronext Paris Stock Exchange)

# Our services through the life cycle of an Industry



# Our services through the life cycle of an Industry



# STRONG POSITIONS



**TOP 2**

## MARINE & OFFSHORE

8%\*

Provide ship & offshore platform classification services and technical expertise to assess and manage risks as well as improving performance



**#1**

## INDUSTRY

23%\*

Maintain the safety, reliability and integrity of industrial assets and assess compliance with national, international and voluntary QHSE standards



**#1**

## BUILDINGS & INFRASTRUCTURE

24%\*

Provide assurance buildings & infrastructure in use or under construction are compliant and energy-efficient  
Assess safety and performance of in-service facilities



**TOP 2**

## CERTIFICATION

8%\*

Certify that quality, health, safety and environmental management systems comply with international, national, industry or company-specific standards



**TOP 3**

## AGRI-FOOD & COMMODITIES

23%\*

Improve transparency and verify the composition, quality and quantity of commodities throughout the value chain, from drilling to trading, and from farm to fork



**TOP 3**

## CONSUMER PRODUCTS

14%\*

Test and verify consumer product compliance, quality, safety and performance and improve supply chain efficiency

# KEY FIGURES



**€4.6**

**billion**

revenue in 2020

**75,000**

employees



**400,000**

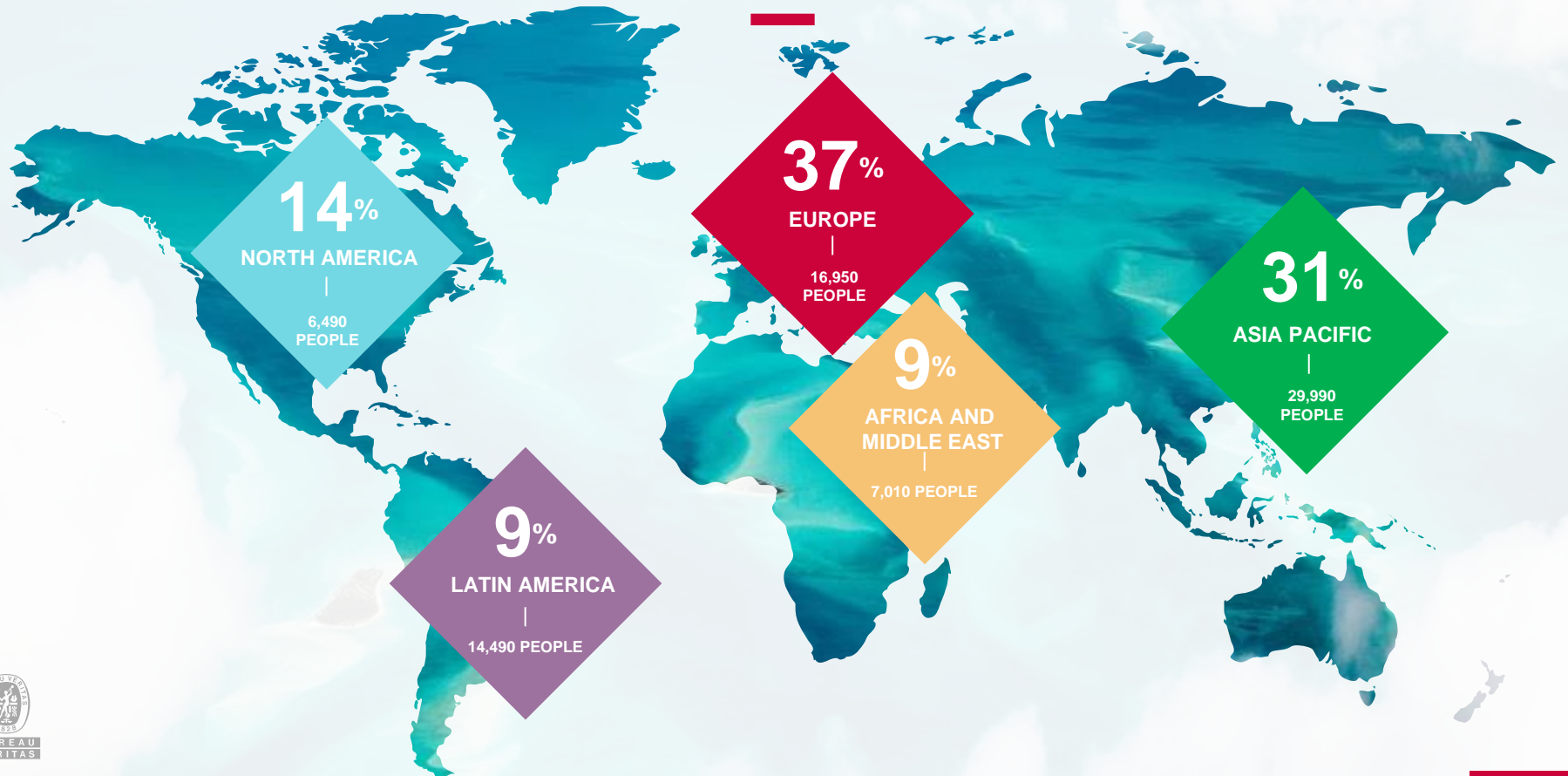
clients

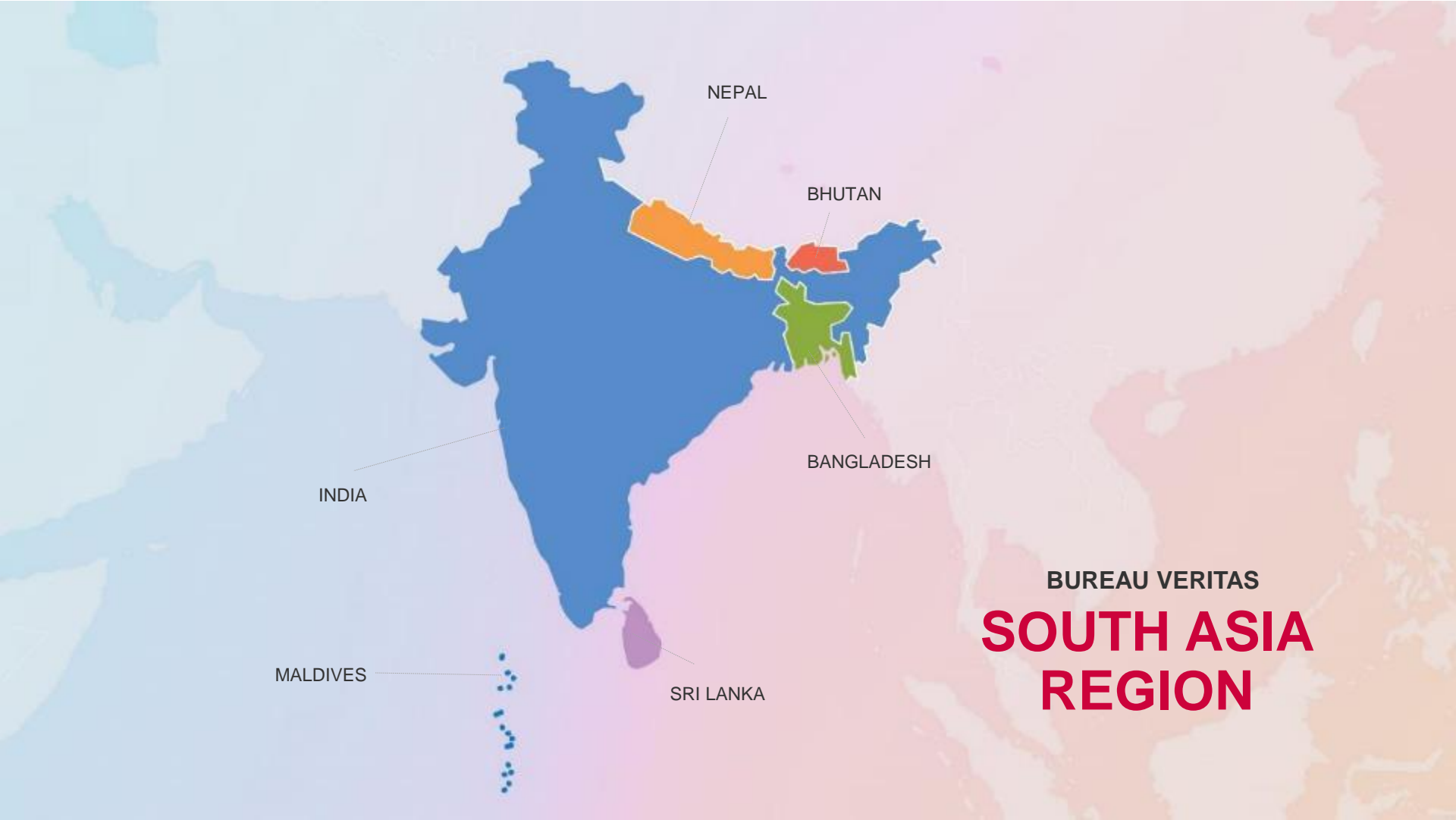
More than  
**1,600**

offices & laboratories  
in 140 countries



# REVENUE AND PEOPLE BREAKDOWN BY GEOGRAPHY





**BUREAU VERITAS**  
**SOUTH ASIA**  
**REGION**



# BUREAU VERITAS, SOUTH ASIA IN KEY FIGURES

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**5,854**

Employees



**50,000**

Clients



**103**

Offices &  
Laboratories



**107**

Accreditations & Agreements

# RECOGNITIONS AND APPROVALS

 +107



ISO 9001:2015 (QMS)



ISO 14001 (EMS) &  
ISO 45001



NABCB accreditation for  
ISO/IEC 17020:2012 Type  
"A" Inspection body.



Competent Inspecting authority  
under IBR 1950 by Central  
Board of Boilers(CBB)  
worldwide



Recognized by CBB for  
RLA of Boilers across  
India



Competent authority under  
SMPV rules by PESO



NABL ISO 17025  
accredited construction  
material testing laboratories



RDSO approved Independent  
Safety Assessor (ISA) for  
Signalling Projects and  
Products



**DOT 4L Certification**  
DOT 4L approval and the  
applicable U.S.  
Regulations



**MOM OSHD Singapore**  
Authorization to conduct  
fabrication survey of Pressure  
Systems for use in Singapore



**MHLW Japan**  
Authorization to conduct  
fabrication survey of Boilers and  
Pressure Systems for use in  
Japan



# *PNGRB Authorisations and Process for T4S Audit/ ERDMP Certification/IMS Certification*



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## PNGRB-authorized TPIA for -

- ▶ Conformity assessment as per T4S for city and local gas distribution (CGD) network regulations
- ▶ Conformity assessment as per T4S for natural gas pipelines regulations
- ▶ Conformity assessment as per T4S for petroleum and petroleum product pipelines regulations
- ▶ Conformity assessment as per T4S for LPG storage and bottling facilities regulations
- ▶ Conformity assessment as per T4S for Petroleum Installation facilities regulations
- ▶ Conformity assessment as per T4S for LNG facilities regulations
- ▶ Certification as per ERDMP regulations
- ▶ Certification as per IMS CGD regulations

# Process for Certification of ERDMP

- ▶ Receipt of ERDMP (including HAZOP & QRA report) from the Entity.
- ▶ Scrutiny of the documents and intimation to the Entity in case of missing documents, if any
- ▶ Review of documents (ERDMP/QRA/HAZOP) w. r. t. PNGRB ERDMP Regulations and identification of gaps.
- ▶ Submission of gap assessment report
- ▶ Re-submission of updated ERDMP by the Entity after addressing the gaps
- ▶ Review of updated ERDMP by Bureau Veritas for completeness.
- ▶ Confirmation of satisfactory completeness of the ERDMP document to the Entity or advise for further updating, if required

# Process for Certification of ERDMP



- ▶ Site assessment visit by Bureau Veritas team to verify whether the entity has made necessary arrangements at site as mentioned in the ERDMP document and witness a mock drill for checking whether the emergency arrangements and procedures mentioned in the ERDMP document are followed and their effectiveness in mitigating the likely impact of emergency(ies).
- ▶ Submission of site assessment report to the Entity for compliance.
- ▶ Final review of ERDMP document and compliance status submitted by the entity.
- ▶ Receipt of Final ERDMP document from the Entity.
- ▶ Issuance of Certificate of Conformity and certification of ERDMP document.

# Process for T4S Audit

- ▶ Opening Meeting with Senior Management of facilities, personnel responsible for operation and maintenance of the facilities.
- ▶ Carry out field visits and witnessing mock drills to the facility under audit scope and gather factual information using the checklists issued by PNGRB. These checklists encompass the scope for carrying out site inspection, perusal of records & documents and discussions with plant personnel.
- ▶ Close-out meeting with Senior management of the facilities and personnel to apprise the client of major observations, findings and to close out the non-conformities
- ▶ Submit draft report to clients for comments.
- ▶ Issue final report by incorporating the comments on the draft report.

# Process for Certification of IMS (CGD)

- ▶ Receipt of IMS document form the Entity.
- ▶ Scrutiny of the documents and intimation to the Entity in case of missing documents, if any
- ▶ Review of IMS document w. r. t. PNGRB IMS CGD Regulations and identification of gaps.
- ▶ Submission of gap assessment report
- ▶ Re-submission of updated IMS by the Entity after addressing the gaps
- ▶ Review of updated IMS by Bureau Veritas for completeness.
- ▶ Confirmation of satisfactory completeness of the IMS document to the Entity or advise for further updating, if required

# Process for Certification of IMS (CGD)



- ▶ Site assessment visit by Bureau Veritas team to verify whether the entity has made necessary arrangements at site as mentioned in the IMS document and witness a mock drills.
- ▶ Submission of site assessment report to the Entity for compliance.
- ▶ Final review of IMS document and compliance status submitted by the entity.
- ▶ Receipt of Final IMS document from the Entity.
- ▶ Issuance of Certificate of Conformity and certification of IMS document.



## *ERDMP - Observations/Findings*



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## Major Observations/Findings – Retail Outlets

- ▶ L1 Mock drills are not conducted at Auto LPG Dispensing Station.
- ▶ There is no hand/electric sirens available at ALDS.
- ▶ Smoke detectors are not installed at ALDS.
- ▶ There is no earthing in DG at ALDS and double earth of equipment . Earth grid resistance are not measured and recorded at ALDS (Fencing enclosing ALDS are not earthed.
- ▶ Use of non-sparking tools are not in practice at ALDS.
- ▶ Flanges are without jumpers at RO.
- ▶ The calibration records of pressure gauges and SRV is not available.
- ▶ LPG unloading hose pipe testing and continuity records are not available.
- ▶ Mobile phones are being used by FSMs in the fore court during filling.

# Major Observations/Findings – LPG Bottling Plant



- ▶ MV spray system was operated in bullet area. Some sprinklers were partially choked.
- ▶ The chain link fencing in the plant, sheds and HSD tanks were not double earthed including the gate leaves and the concertina fencing.
- ▶ The displayed graphical siren code was found in line with the ERDMP Regulations.
- ▶ In LPG leakage detection system, was malfunctioning during site visit.
- ▶ Security threat plan including bomb threat was not available
- ▶ Emergency lights were available but not functional.
- ▶ Emergency spark proof tool kits were not available at TLD area as well as in tank trucks.
- ▶ TREM card was not available with the tank truck (NL 01 N 3620) driver at TLD bay. (sample check)

# Major Observations/Findings – LPG Bottling Plant



- ▶ Designated ECC / Location In-charge's chamber does not have the facilities / infrastructure /documents in line with the requirements of the Regulation.
- ▶ During Mock drill, Siren code was not followed.
- ▶ Earthing Continuity of filling gun – 55 was missing.
- ▶ In LPG pump house JB was not uniformly tightened and allen bolt holder of flame proof fitting was found broken.
- ▶ There is only one approach to the Gantry platform. No second approach to the platform was available as an alternate route of escape.
- ▶ Structural earthing was not provided for the tanker lorry filling shed.

# Major Observations / Findings – Refineries

- ▶ There was no designated alternate emergency control room.
- ▶ Fire hydrant network is more than 100 m in loop & farthest point was at end of the Refinery and there was no hydrant network pressure monitoring at control room/emergency centres.
- ▶ Fire detection system in control room of CGP-01 ceiling was not working.
- ▶ Water sprinkler system for external cooling of DH Tank No.1 was non-existent.
- ▶ At CDU unit near E11A & E012, Insulation was not intact, gas/steam leakage observed.
- ▶ During mock drill it was observed that approach to site was hindered for fire tender/ ambulance, because of hindrances on the road(s) created by unwarranted drums kept on the road.

# Major Observations / Findings - Terminals/POL Depots



- ▶ Double earthing were not provided for all chain link fencing and gates.
- ▶ Earth pits were not in line with IS 3043. The earth pits layout drawing was not available.
- ▶ No emergency lights have been provided in pump house.
- ▶ Earthing not provided for all the push button stations at product pump house and TT gantry.
- ▶ The two PSV installed on export pumps had not been calibrated since last 2.5 years.
- ▶ Sparking tools were found in pump house along with non-sparking tools.
- ▶ In Tank no-3 & 5 sprinkler was operated but it was not effective. Dry patches on tank shell were observed.

# Major Observations / Findings - Terminals/POL Depots



- ▶ Work permit system is not being followed. Since last 09 months from audit date, no work permit issued / taken for any activity.
- ▶ LOTO System is available however it's not in practice.
- ▶ The gate and the chain-link fencing/Concertina fencing were not double earthed.
- ▶ Documents required as per ERDMP regulations were found not available in ECC room.
- ▶ Double earthing are not provided for all chain link fencing and gates.
- ▶ Earth were are not in line with IS 3043. The earth pit layout was not available.
- ▶ No emergency lights were available in pump house.

# Major Observations / Findings - Terminals/POL Depots



- ▶ The two PSV installed on export pumps have not been calibrated since last 2.5 years
- ▶ Sparking tools were found in pump house along with non-sparking tools
- ▶ In Tank no-3 & 5 sprinkler was operated but it was not effective. Dry patches on tank shell was observed.
- ▶ LOTO System is available however it's not in practice.
- ▶ The gate and the chain-link fencing/Concertina fencing are not double earthed.
- ▶ Documents required as per the ERDMP regulations was found not available in ECC room.
- ▶ Earthing not provided for all the push button stations at product pump house and TT gantry.

# Major Observations / Findings - Aviation Fuel Station



- ▶ High Mast Tower was found without GI strip earthing.
- ▶ The MOV was found without double earthing for the tanks nos 4, 5 and 6.
- ▶ The compound wall fencing, structural platforms and other structures were not double earthed.
- ▶ Sparking tools was found in the MCC room tool box.
- ▶ Filling and other sheds, fencing, gates, HSD tanks were not double earthed.
- ▶ End flanges of the pipelines were not earthed in pump manifold area.

# Major Observations / Findings – LNG Terminal



- ▶ No ERDMP certification of LNG Terminal in 2021 -2025

# Major Observations / Findings – PPPL



- ▶ There was no Electrical / Hand Operated Siren provided in Ethane Pumping Station.
- ▶ Convex mirror was not placed at turning on the approach road of pump house. In case of emergency, the fire tenders or other emergency vehicles may collide.
- ▶ No provision of Smoke detectors in Conference room, Canteen and few other left out in the buildings Intermediate Pigging station.
- ▶ There was no Electrical / Hand Operated Siren provided in Ethane Pumping Station.

# Major Observations / Findings – PPPL



- ▶ Convex mirror was not placed at turning on the approach road of pump house. In case of emergency, the fire tenders or other emergency vehicles may collide.
- ▶ No provision of Smoke detectors in Conference room, Canteen and few other left out in the buildings Intermediate Pigging station.
- ▶ Control room hydrocarbon detector controller annunciator panel tested and found not working at Intermediate Pigging station.
- ▶ Aragonite fire suppression at Intermediate pigging station system were not kept put on auto mode.
- ▶ Pipes end flanges are not earthed.

# Major Observations / Findings – NGPL



- ▶ Water Sprinkler system was not available at scrubber and Scrapper launcher area as per T4S Standard schedule 1E (Safety and fire protection system of natural gas).
- ▶ Pipes end flanges are not earthed.
- ▶ Structure and platform earthing are not earthed at compressor terminal.
- ▶ Flange jumpers were not installed at all flanges at scrubber.

# Major Observations / Findings – CGD



- ▶ Public address system is not available.
- ▶ Odourisation unit was found in manual mode.
- ▶ Continuity jumpers was missing pipelines.
- ▶ Hand siren was found not provided at CNG Station Bhiwadi.



## *T4S - Observations/Findings*



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# Major Observations / Findings – PPPL



- ▶ There was no Electrical / Hand Operated Siren provided in Ethane Pumping Station.
- ▶ Inter-distance between Boundary wall and station outlet valve does not meet the requirement.
- ▶ SIL (Safety Integrity Level) certificates are available for individual instruments. SIL study not done for the whole system.
- ▶ Junction Box of individual light poles in hazardous area were found without FLP.
- ▶ Generator and Transformer neutral earthing are not connected to 2 dedicated earth pits and connected with GI/ Copper strips.

# Major Observations / Findings – NGPL

- ▶ Water Sprinkler system to installed at scrubber and Scrapper launcher area as per T4S Standard schedule 1E (Safety and fire protection system of natural gas.
- ▶ LEL meter place at SV station was found not operational during audit.
- ▶ Flange jumpers were not installed at all flanges at scrubber.
- ▶ Water Sprinkler system to installed at scrubber and Scrapper launcher area as per T4S Standard schedule 1E (Safety and fire protection system of natural gas
- ▶ Flange jumpers were not installed at all flanges at scrubber.
- ▶ MCP points ZONE marking were not painted in bold in addition to the available zone marking at each MCP point at compressor terminal.
- ▶ Structure and platform earthing are not earthed at compressor terminal.
- ▶ Trip bypass procedure was not available at compressor terminal.

# Major Observations / Findings – CGD

- ▶ A few continuity jumpers was missing pipelines.
- ▶ Gas leak monitoring panel was found not working during audit.
- ▶ CO2 flooding system (main and standby both) were found locked with lock pin.
- ▶ Mock drill inline with PNGRB guidelines are not carried out.
- ▶ Odorisation at CGS station was found not in auto mode.
- ▶ Patrolling report was not available with entity.
- ▶ High pressure SS tube fuelling was found without protected SS tube holders at CNG stations.

# Major Observations / Findings – CGD



- ▶ “CNG only” (fluid details) are not stamped/displayed on cylinder body of static cascades.
- ▶ A steel cage was not provided for GI riser pipe at the bottom of DPNG pipeline to prevent accidental damage from hitting of vehicles

# Major Observations/Findings – LPG Bottling Plant



- ▶ The LPG pumps have only audio alarms and does not have visual indication.
- ▶ The earth pits are not comply with IS 3043. The pits should have 02 bolts of GI with 10 mm of diameters with spring washer.
- ▶ The sparking tools was being used in tank lorry unloading gantry and filling shed by the electrician in the licensed area.
- ▶ The end flanges of the pipelines were not earthed.
- ▶ The service water pump was under repair but no lockout tag out practice was implemented in MCC panel.
- ▶ Chain link fencing in the plant are not double earthed.
- ▶ The hand held Metal Detector is not provided to security personnel at main locations. The Door Metal Detector (at Main Gate) was also not provided.

# Major Observations/Findings – LPG Bottling Plant

- ▶ The compound wall is less than 3M with barbed fire fencing and does not meet the MoHA guidelines To be rectified to meet MoHA guidelines.
- ▶ It was noticed during audit that the Gas Monitoring System is not working since last three months.
- ▶ Unloading LPG hoses were not found hydro tested as per standard.
- ▶ No ESD provided at the Plant.
- ▶ There were no Manual Call Point (MCP).
- ▶ The sprinkler system at the tank unloading gantry was inadequate. There were no sprays from all sides including the bottom.
- ▶ There was no curb wall of 300 mm high provided around the bullets nor a water seal trap.
- ▶ There are certain flanges of different class and not the same class.

# Major Observations/Findings – LPG Bottling Plants



- ▶ No pressure gauge is provided at the hydraulically farthest point.
- ▶ Certain sprinkler lines were found to be choked in the bullet and the tank unloading area.
- ▶ There was no street lighting provided in the plant.

# Major Observations / Findings - Terminal/POL Depot



- ▶ There was only one approach to the Gantry platform and no second approach to the platform as an alternate route of escape.
- ▶ Fire layout drawing showing the position of FE with identification no., monitors, Hydrants, HVLRS, MEGF ,etc. was not updated.
- ▶ Tank dykes were not numbered and the capacity of the dykes not displayed.
- ▶ The details in line with IQCM like tank number, product name, dimension of tank, last calibrated date and due, last cleaning date and due, and reference height of the tank were not printed/displayed on the tanks.
- ▶ Two Earthing strips were not available per tank as also two bolts were not available in the earth pit and the earth pits were within the dyke. To be modified in line with IS 3043.
- ▶ Hose pipes were not having numbering with records of testing.
- ▶ Permanent water accumulation was evident around 02 product tanks.

# Major Observations / Findings - Terminal/POL Depot



- ▶ Hand held metal detectors were not provided at security gate.
- ▶ Workmen were not trained on hose handling while fighting the fire.
- ▶ Provision of Pressure gauge was not available at the Pig receipt manifold.
- ▶ The work permits do not conform to OISD 105. However, permit system is being maintained.
- ▶ Fire hydrant layout drawing showing the position with identification no., of monitors, hydrants, HVLRs, MEGF, etc. are not updated.
- ▶ Few TT drivers were found not having certificate of training as per CMVR 9.
- ▶ SIL certificates were available for individual instruments. However, SIL study have not done for the whole system.
- ▶ All dyke valves were fitted with proximity switch, however the same were not working.



## *IMS - Observations/Findings*



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# Major Observations / Findings – City Gas Distribution Network (CGD)



- ▶ DSMs, technicians are not well aware about IMS requirements.
- ▶ The barbed wire fencings/posts on station compound wall were not double earthed.
- ▶ Number and type is not marked on TLP post at transformer rectifier unit.
- ▶ Pipeline supports are not proper.



## *Way Forward*

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- ▶ Capacity building of entities on PNGRB Regulations on continual basis.
- ▶ PNGRB may advise entities for floating separate queries/tenders for preparation and certification of ERDMP.
- ▶ PNGRB may advise entities for floating separate queries/tenders for carrying out HAZOP/QRA and certification of ERDMP.
- ▶ Like T4S Audit, PNGRB may issue checklists for review of ERDMP document and site assessment. This is expected to bring in uniformness in the assessments irrespective of the agency carrying out the assessment.
- ▶ PNGRB may issue guidelines to entities for timely responding with comments/compliance in respect gap assessment report and site assessment report submitted to them.

# Thank you



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