



Petroleum and Natural Gas Regulatory Board

Regulatory Framework for City Gas Distribution networks

23rd January 2025

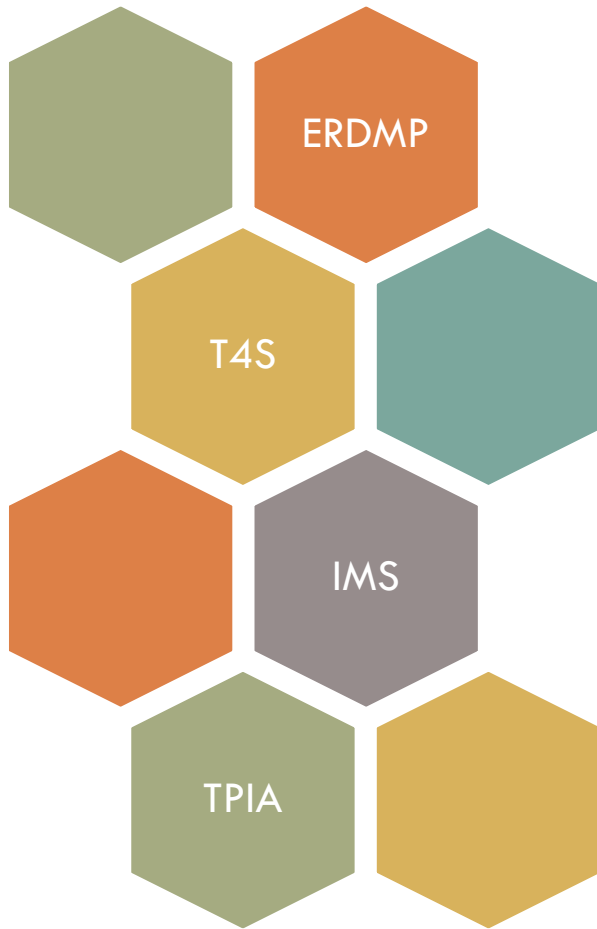
Presented by – Shri Gagan Aggarwal
Shri Ambikesh Tiwari

Technical functions as per PNGRB Act

Under PNGRB Act, 2006

- As per clause 11 sub clause (i), the Board shall lay down, by regulations, the technical standards and specifications including safety standards in activities relating to petroleum, petroleum products and natural gas, including the construction and operation of pipeline and infrastructure projects related to downstream petroleum and natural gas sector
- As per clause 61 sub clause (1), the Board may, by notification, make regulations consistent with this Act and the rules made there under to carry out the provisions of this Act

Classification of Technical Regulations



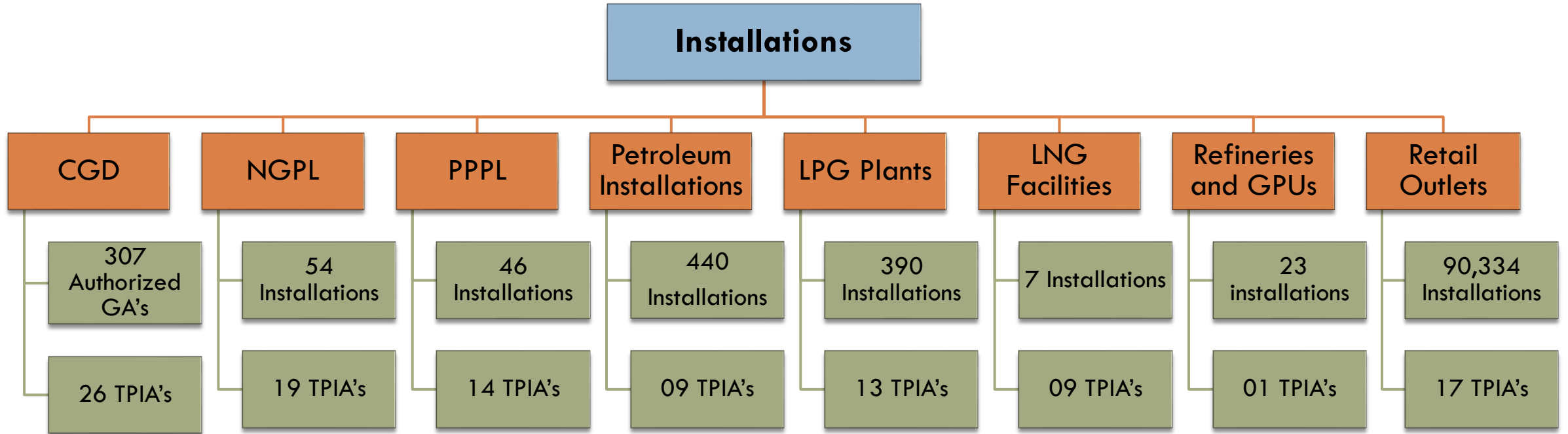
Technical Standards and Specifications including Safety Standards
(**T4S Regulations**)

Emergency Response and Disaster Management Plan
(**ERDMP Regulations**)

Integrity Management System
(**IMS Regulations**)

Third Party Conformity Assessment
(**TPCA Regulations**)

Installations under Regulations of PNGRB



~ 91,585

Total No of Installations

~664

TPIA Audits Conducted
(FY 2023-24)

31

TPIA's Empaneled

Emergency Response and Disaster Management Plan (ERDMP Regulations)

The standards specified in these regulations are intended to develop a concise and informative ERDMP to enable the entity to mitigate the emergency as quickly as possible

- to **prevent escalation** of events both on-site and off-site emergencies
- to **minimize impact** on people,
- to **reduce damage** to property, machinery and environment
- to **develop a state of readiness** and preparedness for a prompt and orderly response to an emergency

These Regulations are notified for the following installations;



Natural Gas
Pipeline



Petroleum and
Petroleum Product Pipeline



City or Local Natural Gas
Distribution Networks



Petroleum Refineries and
Gas Processing Plants



Petroleum Installations



LPG Storage, Handling
and Bottling Facilities



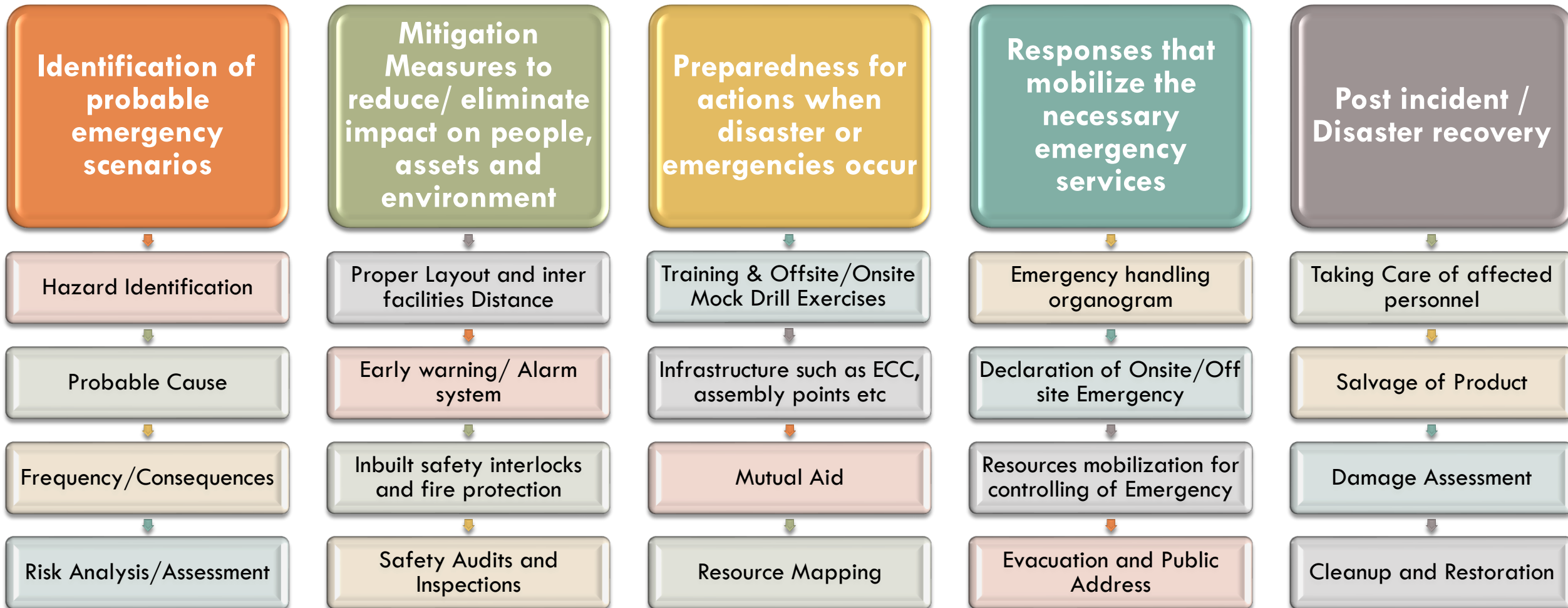
Retail Outlets dispensing
Petroleum, Auto LPG and CNG



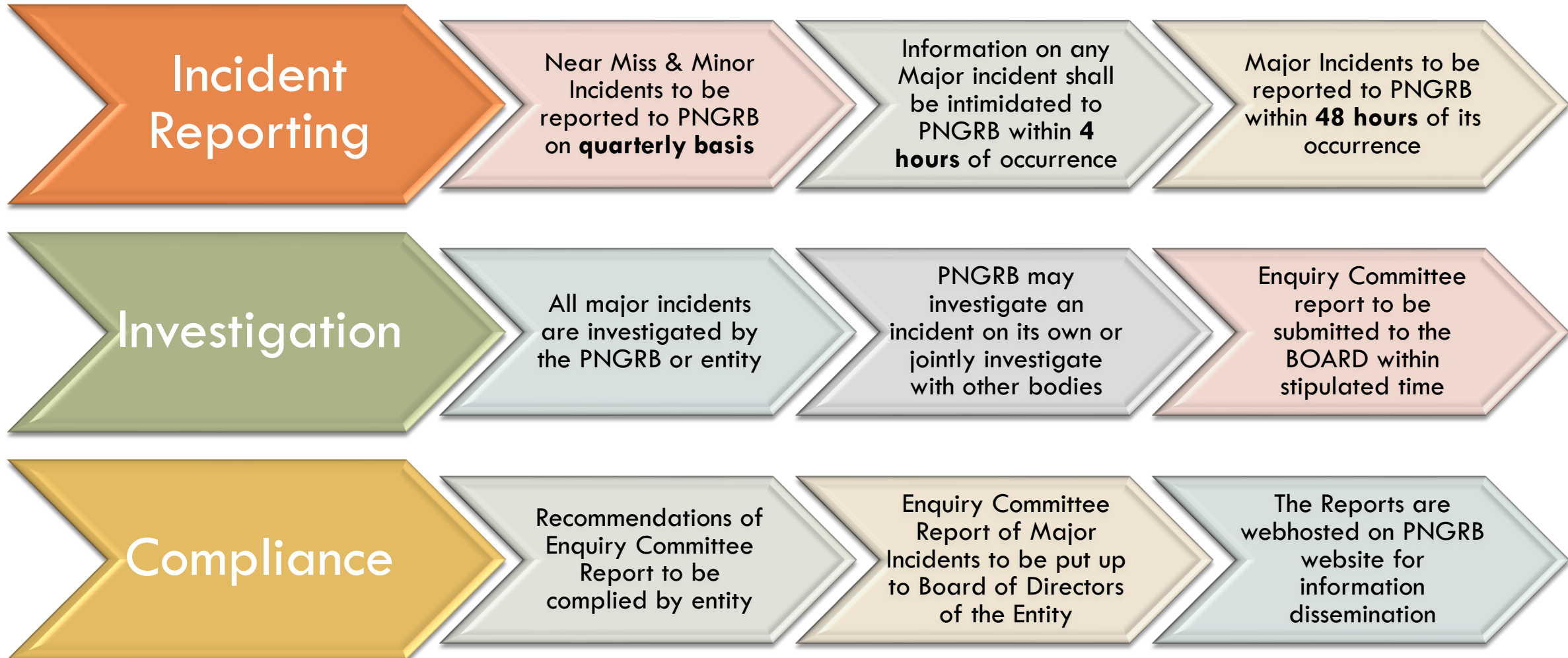
Liquefied Natural
Gas Facilities

ERDMP Regulations - Scope

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Incident Reporting/Investigation/Compliance



Technical Standards and Specifications including Safety Standards (T4S Regulations)

These Regulations are intended to ensure uniform application of design principles and to guide in selection and application of materials and components, equipment and systems and uniform operation and maintenance of the system and shall primarily focus on safety aspects of the employees and public and facilities associated.

These Regulations are notified for the following installations;



Natural Gas Pipeline



Petroleum and Petroleum Product Pipeline



City or Local Natural Gas Distribution Networks



Petroleum Refineries and Gas Processing Plants



Petroleum Installations



LPG Storage, Handling and Bottling Facilities



Retail Outlets dispensing Petroleum, Auto LPG and CNG



Liquefied Natural Gas Facilities

Technical Standards and Specification Including Safety Standards (T4S) – Safety Philosophy

Design & Installation Philosophy

- Design Criteria
- Material and Equipment Selection
- Piping System Components
- Welding and Fabrication Details
- Installation and Testing

Operational Philosophy and Procedures

- HSE Policy
- Approved SOP's
- Limits of Operating Parameters
- Trouble shooting and Safe Shutdown
- Adequate knowledge and experience
- Proper Supervision
- Training

Maintenance Philosophy and Procedures

- Pipeline Patrolling
- Maintenance of RoU for Inspection of Crossings
- Pipeline Pigging
 - Intelligent Pigging
 - Cleaning Pigging
- Cathodic Protection System
- Coating Survey
- Repair Procedures

Safety and Fire Protection

- Fire Alarm Systems
- Fire/Gas detection systems
- Fire fighting Equipment
- Fire water system
- Communication System
- Emergency Power supply
- Emergency Plan

Integrity Management System (IMS Regulations)

These regulations are intended to evaluate the risk associated and effectively allocate resources for prevention, detection and mitigation activities; to improve the safety of infrastructure so as to protect the personnel, property, public and environment; to have streamlined and effective operations to minimize the probability of failures.

These Regulations are notified for the following installations;



City or Local Natural Gas
Distribution Networks



Petroleum and
Petroleum Product Pipeline



Natural Gas
Pipeline

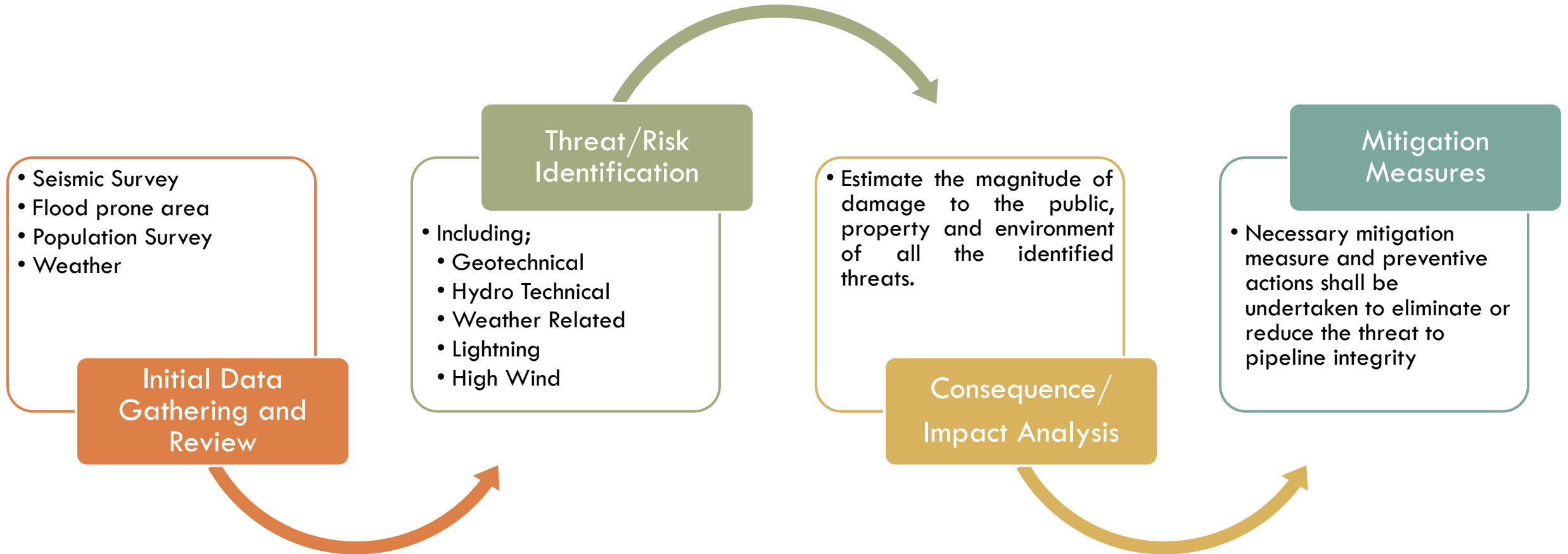
Integrity Management System - Objectives

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The objective of Pipeline Integrity Management System is to maintain integrity of city gas distribution networks at all times to;

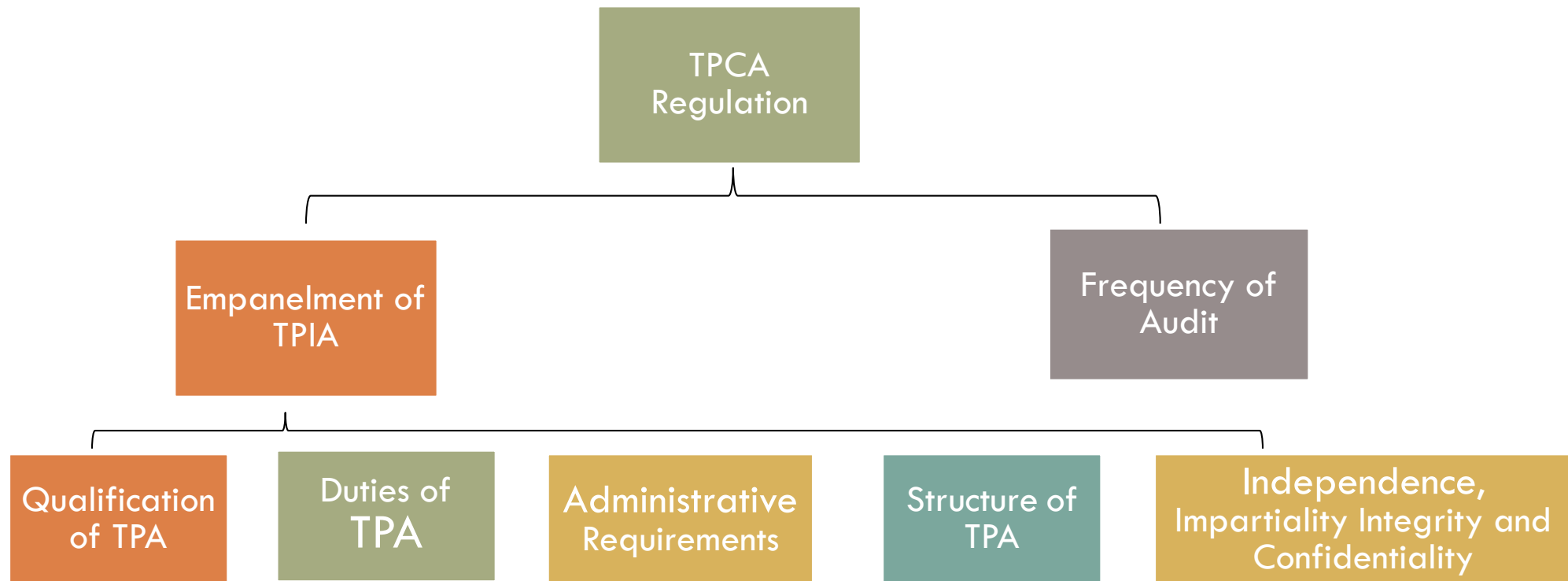
- Ensure public safety
- Protect Environment
- Ensure availability of pipeline to transport
- Minimize risks associated with accidents

Integrity Management System - Scope



Third Party Conformity Assessment Regulations (TPCA)

The standards specified in these regulations are intended to specify mechanism for assessment of conformity to various regulations by the entities through Approved Agencies or by the Board on its own including eligibility criteria and procedure for assessment of Third-Party Agency for empanelment as Approved Agency.



Compliance of T4S/IMS/ERDMP Regulations

Multi Disciplinary Team Audits

- By PNGRB team
- As per Board direction

TPIA Audits

- By PNGRB empaneled TPIA
- Once every 3/5 year

Internal Audits

- By Internal team of the entity
- Every year

Compliance Monitoring
w.r.t. Audit Observations
is being done regularly
by Technical Division

Emergency Handling at co-located CNG-Petroleum Dispensing Station

- In the recent past, procedure of Emergency handling at co-located CNG – Petroleum dispensing stations has been clarified to the concerned entities. (Refer [Slide](#))

High Level Expert Committee Report

- Recently, PNGRB has finalized its High-Level Expert Committee Report reviewing the extant safety framework of the downstream oil & gas sector.
- Competency building and knowledge sharing across the sector is one of the recommendations made by committee.

Recent Developments

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Adoption of Hydrogen relevant Standards

- 1st set of 18 no. of MNRE recommended standards has been reviewed and 2 nos. of relevant standards has been adopted in PNGRB T4S for CGD Regulations, 2008.
- 2nd Set of 58 nos. of MNRE recommended standards is under deliberation in Technical Committee.

Adoption of BIS certified PNG Stoves

- PNGRB is going for public consultation regarding inclusion of provisions adoption of BIS certified PNG Stoves (conforming to IS 17153) in PNGRB T4S for CGD Regulations, 2008.

Recent Developments

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Pilot Projects on Hydrogen blending with Natural gas in CGD networks

- PNGRB has approved total 6 nos. of pilot projects on Hydrogen blending with Natural gas in city gas distribution networks and has achieved blending percentage up to 8% v/v .

Revival of Technical Committee

- Technical committee for PNGRB T4S for CGD Regulations has been reconstituted for strengthening the Amendment process and ensuring regular updation of the existing regulations.

Thank You



Emergency handling at Co-located CNG – Petroleum Dispensing Stations

