



IndianOil

# Preventions & Learnings from incidents of third-party damages / accidents in CGD

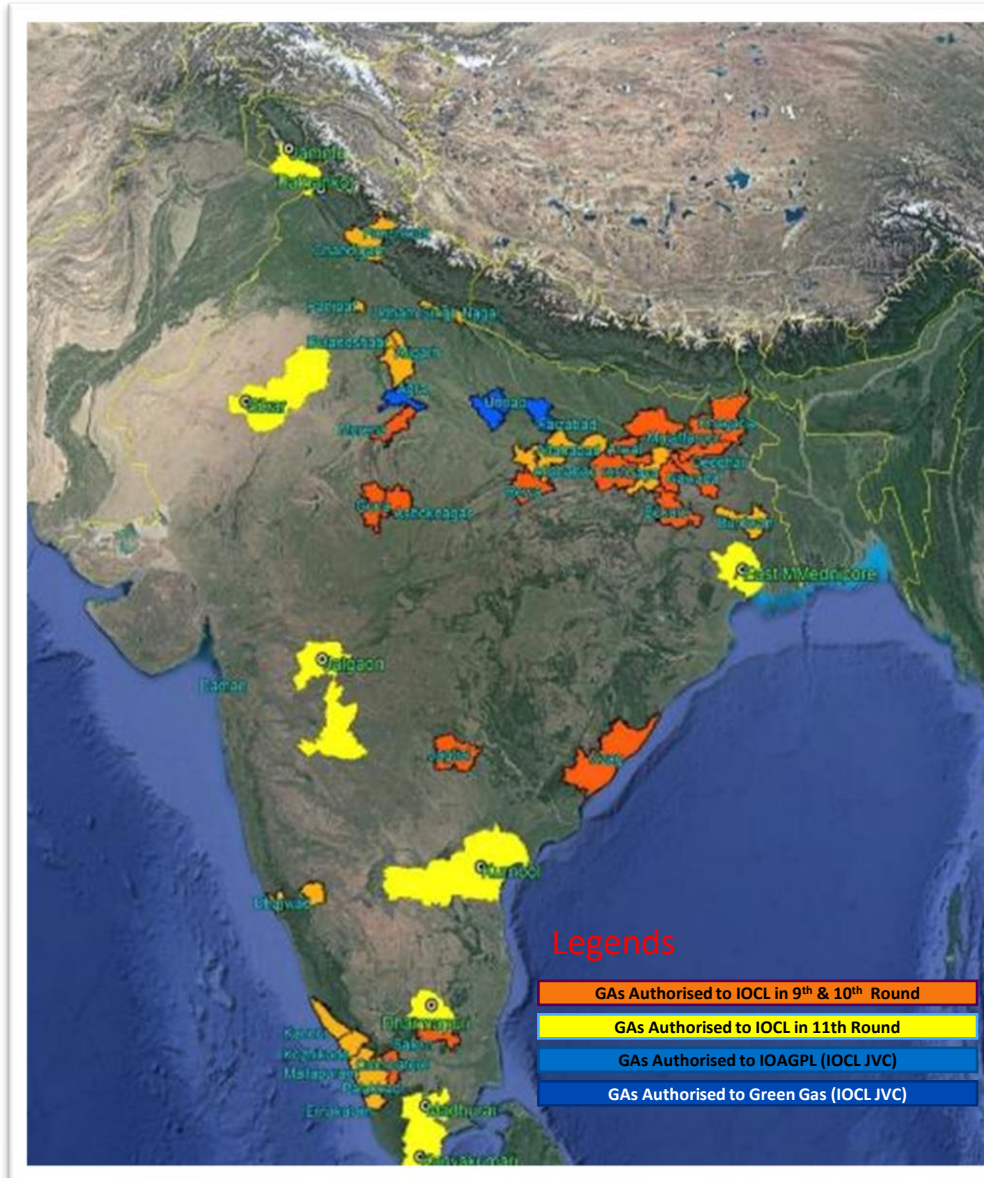
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Jan'25

**"In CGD Business, Safety is not an option  
but a necessity—every action matters"**



# GA's authorized to IndianOil – 26 GA's



**GAs authorized:**  
**IndianOil/ JVCs : 49 (112 Districts)**

**IndianOil's presence (incl JVs):**  
**21 States and UTs**  
**20.6% of Population, 12.3% of Area**  
**15.2% of total CGD Demand**

- Jammu to Kanyakumari & Haldia to Jalgaon
- Semi-urban / Rural setup
- Horizontal spread of households, higher response time
- Unplanned utilities
- Residents are less aware

# Indian Oil – as on date



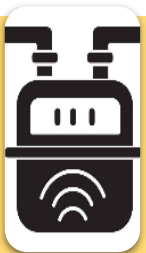
## CGS

Commissioned – 18 CGS & 3 LNG Hubs



## Steel Pipelines

Laid 16112 IK => 1754 km



## PNG Infra

Completed Infra for 1.67 lac PNG-D connections

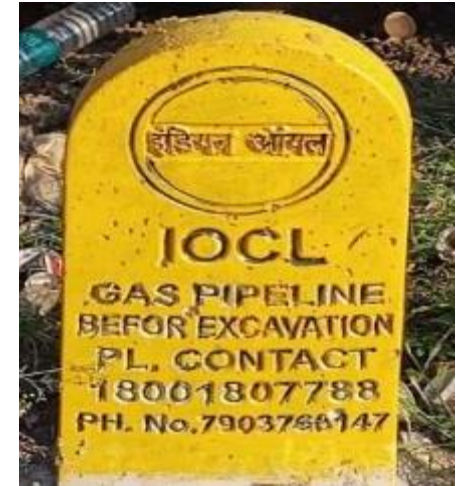


## CNG Stations

Commissioned 334 CNG stations

# Safety Aspect in GAs

- ❑ 24x7 Emergency Response Vehicle & Control Room.
- ❑ Surveillance - with Bike/Foot
- ❑ Leakage Surveys with LEL/Odorant Meter
- ❑ “Dial before Dig” markers installed at regular interval
- ❑ Awareness program conducted with other utilities chaired by District Administration.
- ❑ Tea stall/Pan shop vendors were sensitized to act as “Eyes & Ears”
- ❑ Installation of valves at strategic locations including remote actuated valves
- ❑ AOMP based planned maintenance activities
- ❑ Two stages of Cathodic Protection in Steel pipeline –
  - 1) Temporary Cathodic Protection (TCP) - upon commissioning
  - 2) Permanent Cathodic Protection (PCP) – typically within 3 years of pipeline in operation.



# Prevention of incident in CGD Network



# Significance of O&M for CGD



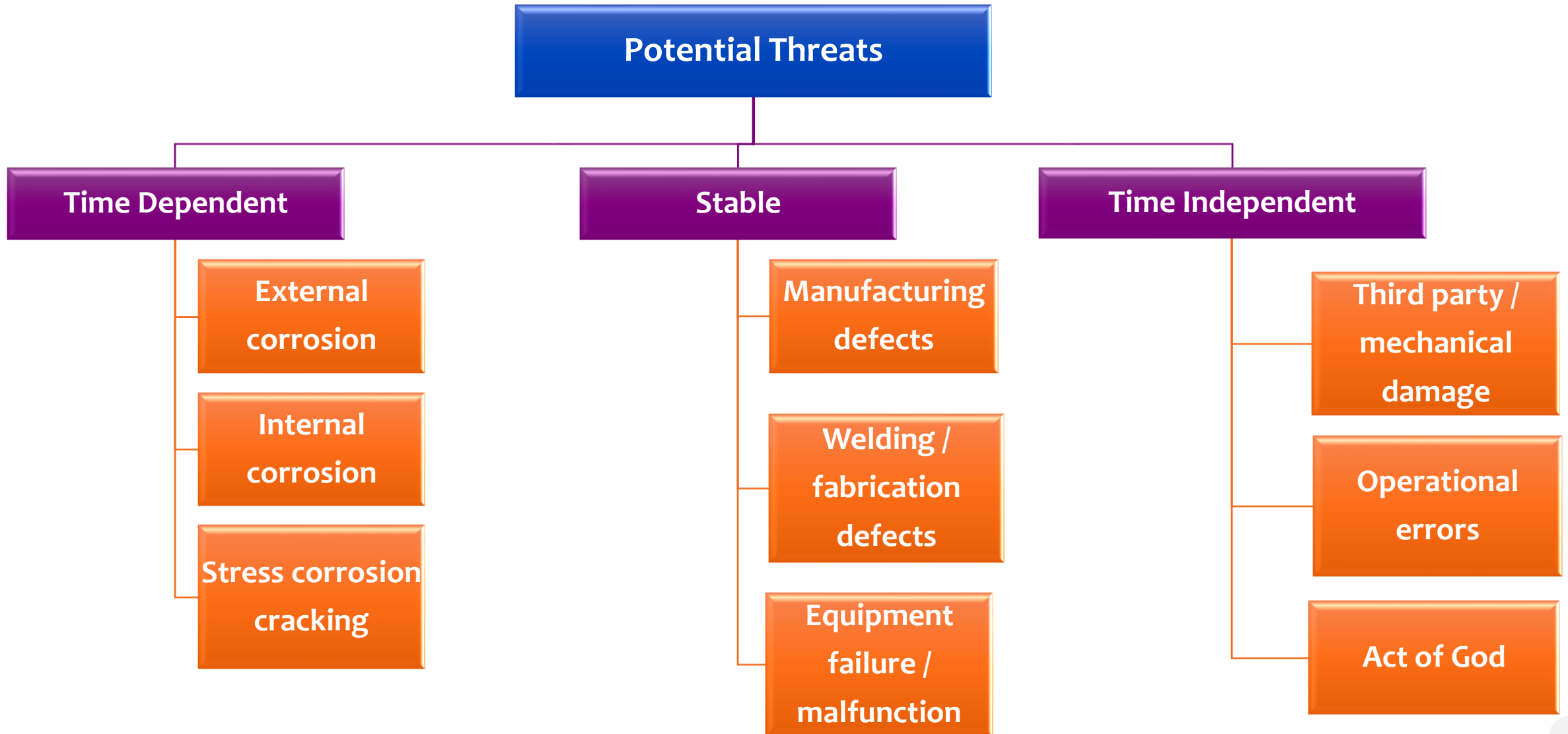
- Cost of regular maintenance is very small as compared to breakdown cost.
- AOMP (Annual Operation and Maintenance Plan) to cover all the aspects like steel pipeline, PE pipeline, PNG and CNG.



- Safety Management System is ensured through compliance to  
**T4S; ERDMP & IMS Regulations of PNGRB,**
- HSE Management System in CGD activities is based on  
**OISD Standards and PNGRB G.S.R. 612(E) Regulations**
- Manuals to be Available:
  - SOP /Guidelines
  - Operations / Maintenance / ERDMP / IMS Manuals
- Legal and Environmental compliance registers to be maintained.



# Pipeline Integrity Threats



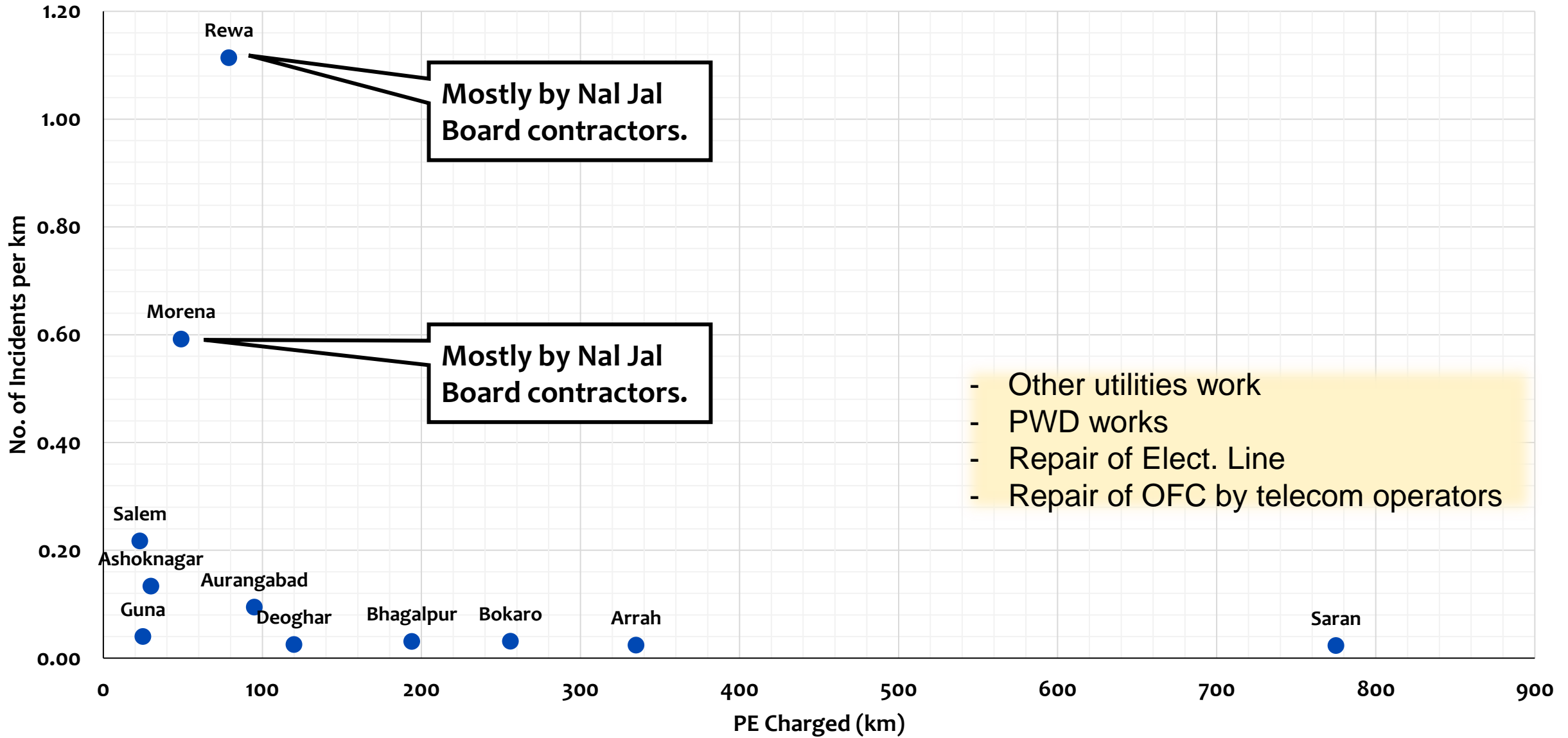


# Third Party Damages and associated hazards

Various incidents of Third-Party Damage in IOC CGD GAs



# Third Party Damages (2023-24)



# Case 1 – Fire near City Gate Station, by Farmers



Informed as Near Miss incident



## Case Study 2 – Fire due to Garbage and Leakage in PE

Initiating Event	Damage of PE pipeline due to Fire in Garbage
<b>Detailed description</b>	<ul style="list-style-type: none"><li>• Third party fire in Waste dumping location occurred beside PE &amp; Steel network.</li><li>• First information by Patrolling team.</li><li>• The Fire was doused by the local district administration along with the help of ERV.</li><li>• The PE pipe beneath the garbage melted due to high temperatures.</li><li>• The burnt pipe was repaired, and the Gas was restored.</li></ul>



### Probable Consequences:

1. Steel Pipeline could also be damaged leading to Major Fire.
2. Damage/Loss to property/ life / environment
3. Negative publicity of CGD Project in the GA.
4. Loss of reputation of IOCL.

### Learnings:

1. **Pipeline route should be away from potential fire hazard**
2. **Construction standards** to be at par with the site conditions.
3. **Hotspot areas be identified & mitigation measures** to be ensured beforehand.
4. District / Municipal authorities must be pre-informed about the Gas Network.
5. **Awareness programs** must be organized for local nearby public at such locations.
6. Initially, **more frequent Surprise Emergency mock drills** to be performed.

## Case Study 3 – Leakage of Gas in PE line

<b>Initiating Event</b>	<b>Third party damage of NG pipeline</b>
<b>Detail description</b>	<ul style="list-style-type: none"> <li>Local shopkeeper informed AEO about the fire.</li> <li>O&amp;M team reached the site and isolated PE section to disconnect gas supply.</li> <li>The State fire tender also reached site and doused the fire.</li> <li>As confirmed by night patrolling police team stationed right on the incident spot, <b>cause for incident was excavation by un-identified Third Party during previous night. Third party immediately tried to cover the damaged pipeline by backfilling with excavated soil and left the site.</b></li> </ul>
<b>Key Learning</b>	<ul style="list-style-type: none"> <li>Education of Fire hazards and safety precautions to be undertaken in case of work near gas line.</li> <li>Enhanced visibility of warning/ caution signs boards, displaying Do's and Don't and emergency numbers with frequent awareness drive to sensitize locals as well as District administration.</li> </ul>
<b>Contributing Factor</b>	<ul style="list-style-type: none"> <li>The third party undertook the excavation without any intimation to CGD entity.</li> </ul>
<b>Follow up Actions</b>	<ul style="list-style-type: none"> <li><b>“Dial before you Dig”</b> notices to be supplemented by GIS mapping of the CGD network.</li> <li>Initially, <b>more frequent Surprise Emergency mock drills</b> to be performed including in odd hours.</li> </ul>

## Case Study 4 – Fire in Storage yard

<b>Initiating Event</b>	<b>Fire in Storage Yard due to third party activities</b>
<b>Detailed description</b>	<ul style="list-style-type: none"><li>• Third party activities led to fire in a CGD Store yard storing PE rolls, Steel Pipes, Compressors, Meters, Regulators etc.</li><li>• The PE pipe acted as a fuel and lead to fire in the storage yard along the winds in summer season.</li><li>• The Fire was doused by the local district administration along with the help of ERV.</li></ul>



## Probable Consequences:

1. Other materials stored could also catch fire.
2. Damage/Loss to property / life and environment.
3. Negative publicity of CGD Project in the GA.
4. Loss of reputation of IOCL.

## Learnings:

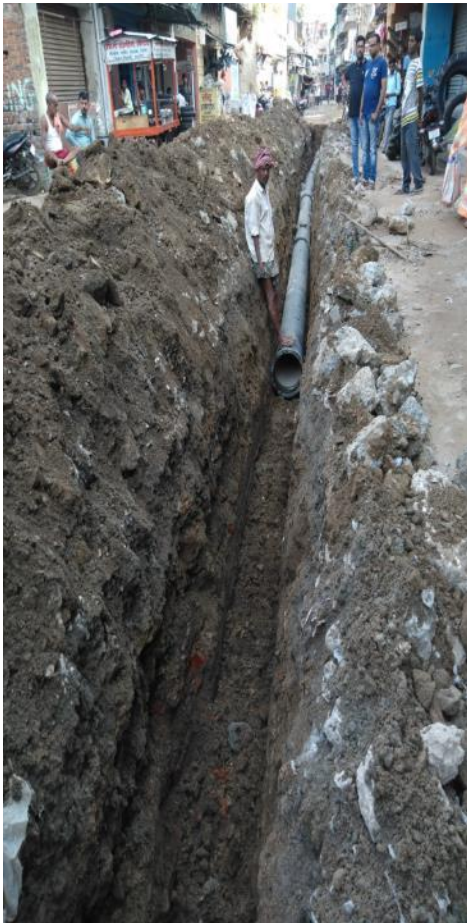
1. Flying ember from nearby *parali* to be monitored by proper inspection and patrolling.
2. **Proper Segregation of Materials must be done to prevent fire in other materials.**
3. **PE coils to be stored in covered area. Hessian cloth serve as a fuel, hence to be removed**
4. **CCTV cameras for remote monitoring**
5. **Awareness programs** must be organized for local nearby public.
6. **Emergency mock drills shall also be carried out in storage locations.**

# Case Study 5 – Theft attempt of transition fitting

<b>Initiating Event</b>	<b>Theft attempt of transition fitting</b>
<b>Detail description</b>	<ul style="list-style-type: none"> <li>• Fire incident was reported to AEO by local resident in midnight.</li> <li>• Immediately ERV with team reached &amp; fire was doused with the help of fire extinguishers after isolation.</li> <li>• As informed by residents, <b>the reason for outbreak of incident was theft attempt of transition fitting</b> and GI pipe piece (approx.1.2 m.) along with isolation valve by miscreants during night hours causing low pressure (P - 100m bar) gas leakage and subsequent fire in 3 nos. of TFs.</li> </ul>
<b>Key Learning</b>	<ul style="list-style-type: none"> <li>• Sensitizing Local Administration &amp; Police for enhanced night patrolling.</li> <li>• Enhanced visibility of warning/ caution signs boards, displaying Do's and Don't and emergency numbers with frequent awareness drive to sensitize locals as well as District administration.</li> </ul>
<b>Follow up Actions</b>	<ul style="list-style-type: none"> <li>• <b>Safety awareness meetings with D-PNG customers/clusters &amp; residents to be briefed to stay more vigilant</b> for any suspicious activity in their vicinity.</li> <li>• <b>Mock drills during odd hours in coordination with Dist. Admn &amp; Police.</b></li> </ul>





## Case Study 6: Third party damage to Steel/PE network:




## Third party hazards near LMC/GI network:





# Efforts by IOCL for reduction in Third Party Damages/Hazards





Community Awareness Programme



# CGD Safety Week

## CGD Safety Week

Some of the Activities to promote awareness during the CGD Safety Week:

- ✓ Meeting with Stakeholders.
- ✓ Safety Clinic in CNG Stations and PNG pockets (including safety Audio jingles)
- ✓ Distribution of Pamphlets.
- ✓ Demonstration of PPE's / Fire Safety Equipment.
- ✓ Emergency Response Drills with Mutual Aid Members/District Administration.
- ✓ Screening of Safety / Fire / Disaster films at CGD locations, offices as well as in housing colony.
- ✓ Safety Talks by Expert



PNG Consumer Safety Audio



CNG Consumer Safety Audio

Krishnagiri GA



Bhagalpur GA



Some Glimpses of CGD Safety Week



Deoghar GA



Bhagalpur GA



**JUST REMEMBER**

**IF YOU EVER DIG A PIT WITHOUT INFORMATION,  
YOU DIG ONE FOR YOURSELF.**



**Thank You**