



Sreedhara Naidu
Apr 9 · 5 min read

The Putra Heights Gas Explosion: An "Accident" or "Incident"? – A Technical and Legal Perspective

★★★★★ No ratings yet

The Putra Heights Gas Explosion: A Technical and Legal Perspective



Putra Heights Inferno (Credit: BERNAMA)

On April 1, 2025, a catastrophic gas explosion struck Putra Heights, Subang Jaya in Selangor, Malaysia, with flames reportedly reaching 30 meters high, injuring up to 145 individuals, including three children. The incident, allegedly linked to a significant gas pipeline network in the region, damaged 237 homes and 365 vehicles, displacing over 500 residents.

As a lawyer and experienced oil and gas engineer with a history of investigating such fire incidents at Oil & Gas terminals, I view this event not as an "accident" - a term avoided in the industry due to its preventable nature - but as an "Incident" that serves as a critical case study in gas pipeline management, health and safety protocols, and the legal options available to victims.

Get in Touch The technical aspects of the explosion, required safety procedures, risks of procedural breaches, comparable overseas incidents, may pursue under Malaysian statute, common law, and tort.



Gas pipelines, such as those forming extensive networks across Peninsular Malaysia, are high-pressure systems transporting flammable natural gas. Effective management relies on robust integrity programs, including advanced monitoring systems to detect corrosion, third-party damage, or structural weaknesses.

Early unconfirmed reports allege that the Putra Heights explosion may have resulted from excavation work conducted near the pipeline, potentially striking infrastructure installed decades ago. Aging pipelines require enhanced inspection techniques - such as inline inspection tools or hydrostatic testing - to identify thinning walls or stress-related cracking.

Excavation near such infrastructure demands precise utility mapping and adherence to protocols like "call before you dig," often stipulated by regulatory bodies. These involve ground-penetrating radar surveys and coordination with pipeline operators to maintain safe standoff distances, typically ranging from 10 to 50 meters depending on pressure and pipeline size.

The incident raises questions about whether such mapping was adequate or if someone allegedly breached the pipeline's protective zone, potentially igniting a gas-air mixture with a spark from equipment, static discharge, or some other ignition source.

Health and Safety Procedures Before Pipeline Works

Under Malaysia's Occupational Safety and Health Act 1994 (OSHA), those undertaking work near gas infrastructure must ensure a safe environment, particularly for high-risk activities. Pre-work safety procedures include:

1. **Risk Assessment:** A thorough evaluation process to identify explosion risks, considering gas pressure, proximity to populated areas, and ignition sources.
2. **Permit-to-Work (PTW) System:** A formal authorization allegedly required from the pipeline operator, involving gas flow isolation, depressurization, and purging with inert gas if intrusive work is planned.
3. **Competent Supervision:** Deployment of trained personnel familiar with gas pipeline standards to oversee operations.
4. **Emergency Preparedness:** Pre-positioned firefighting resources and evacuation plans, coordinated with local authorities.

The explosion's alleged trigger - failure to isolate the pipeline or detect a leak prior to excavation - could potentially have been mitigated by gas detectors or pressure monitoring as well as enforcement of the permit-to-work system, if these were indeed absent as alleged by unconfirmed social media comments. The root cause is yet to be identified, and it is best to leave the investigation to the rightful authorities before any conclusion is reached. Anything else is mere speculation at this point and cannot be accepted as facts.

Risks and Impacts of Health and Safety Breaches

The fire's intensity, reportedly exceeding 1,000°C, highlights the catastrophic potential of such alleged lapses in a residential area.

Breaches of safety protocols near gas pipelines carry severe consequences. A punctured pipeline releases methane, which forms an explosive vapour cloud when mixed with air in a 5-15% concentration. Ignition - allegedly from machinery, sparks, or a distant source - triggers a deflagration or detonation, as evidenced by the 7-meter deep, 30-meter wide crater reported in Putra Heights. The thermal radiation from the fireball, potentially exceeding 12.5 kW/m² within a 100-meter radius, causes severe burns, consistent with victims' reported second- and third-degree injuries.

Beyond immediate physical harm, health impacts include respiratory distress from smoke inhalation and potential long-term exposure to combustion byproducts. Structurally, the heat allegedly melted plastic and rubber components in homes and vehicles, rendering dozens of residences uninhabitable. Economically, losses may exceed RM1 billion, resulting in property damage, reduced land values, and alleged disruptions to industrial gas supply for industrial users.

Overseas Examples of Similar Incidents

Globally, gas pipeline incidents provide instructive parallels. In 2010, a pipeline rupture in San Bruno, California, killed eight and destroyed 38 homes. Corrosion and allegedly inadequate maintenance, combined with construction near the pipeline, were cited as contributing factors. Regulatory authorities criticized allegedly lax oversight and poor utility mapping, prompting stricter safety standards.

Similarly, the 2018 Merrimack Valley incident in Massachusetts saw overpressurized gas lines trigger explosions across three towns, killing one and injuring 21. The incident was allegedly linked to faulty pressure regulation during maintenance work, emphasizing the need for robust PTW systems. These cases, like Putra Heights, illustrate the preventable nature of such incidents when safety measures are allegedly compromised.

Get in Touch

Legal Remedies for Victims

1. **Statutory Remedies:**

- **Occupational Safety and Health Act 1994:** If negligence by a contractor or other party is proven, regulators can prosecute the parties for failing to ensure safety, with fines up to RM50,000 or imprisonment. Victims may also seek compensation through the Employees' Social Security Act 1969 (SOCSO) if injured during employment-related activities.
- **Environmental Quality Act 1974:** Should pollution from the fire be substantiated, authorities could impose penalties, though direct victim compensation is limited.

2. **Common Law and Tort:**

- **Negligence:** Victims can sue parties allegedly responsible, such as a contractor or the pipeline operator, for failing their duty of care, e.g., through allegedly inadequate maintenance or excavation oversight. Proving breach and causation could yield damages for medical costs, property loss, and pain and suffering.
- **Nuisance:** Residents may sue those allegedly managing the pipeline for private nuisance if its proximity to homes foreseeably endangered their quiet enjoyment, seeking injunctions or damages.
- **Strict Liability:** If the pipeline is deemed a "dangerous thing" escaping control, liability may attach without proving negligence, though defenses like alleged third-party acts could apply.

3. **Practical Considerations:**

- The Limitation Act 1953 provides a six-year window for tort claims. Victims should act swiftly to preserve evidence, such as dashcam footage or witness statements (56 recorded by police as of April 5, 2025).
- A class action could streamline claims, particularly with alleged direct property losses exceeding RM65 million. Government aid - e.g., RM5,000 for severely affected homeowners - supplements but does not preclude private remedies.

Conclusion

The Putra Heights gas explosion underscores the complex interplay of technical rigour, safety compliance, and legal accountability in gas pipeline operations. While investigations continue, the incident prompts scrutiny of alleged shortcomings in pipeline management near urban areas, echoing lessons from San Bruno and Merrimack Valley.

Malaysian law offers robust remedies for victims: statutory enforcement under OSHA, tortious claims for alleged negligence or nuisance, and strict liability where applicable. Pursuing these requires prompt action to secure evidence within the six-year limitation period. As recovery unfolds, the focus must remain on preventing such allegedly avoidable incidents, protecting both communities and infrastructure.

Request a Case Review

No Initial Fee, No Obligations

FIRST NAME

LAST NAME

EMAIL

PHONE

Suite 41-02-09
41 Jalan Medang Serai
59100 Bangsar
Kuala Lumpur

Get in Touch

Tel: +60327795017

SUBMIT