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Author Name: Ishani Chakrabarty

VIZAG GAS LEAK

1. ABSTRACT

This article aims to discuss in detail the Vizag Gas Leak. This tragedy is of great significance but has, unfortunately, been overlooked and under-discussed by the media and the public alike. This is mainly due to the COVID-19 pandemic and the lockdowns implemented as a result. Surprisingly, most of the general population is not even aware that a gas leak had occurred during this period. Luckily, the current gas was not as fatal as the ones we had seen on the past, which allowed the incident to fly under the radar.

An incident that rings similar to the current gas leak is that of the Bhopal Gas tragedy. Inarguably the worst industrial accident in Indian history, the tragedy claimed around 10,000 lives and innumerable non-fatal injuries. Even after three decades, its effects are still prevalent and fresh in the Indian conscience. Despite India's history of disastrous chemical leaks, it seems as though we have not learned much from the past. Even today, standard safety precautions and measures are clearly not being met. Even though there has been significant progress since the last few decades, with the number of industrial accidents being at a low, we must strive to eliminate any chance of such a fateful accident occurring. As a nation and as a world, we still have a long way to go.

2. INTRODUCTION

At around 3A.M. on 7th May 2020, an industrial accident occurred at the LG Polymers chemical plant, a subsidiary unit of LG Chemicals, in R.R. Venkatapuram village located on the outskirts of Vishakhapatnam, Andhra Pradesh. The police control room, located about 10-12 km from the site, received the first distress call at around 3:26 A.M. and immediately alerted the Gopalapatnam police. There had been a pungent smell of gas around the area and some residents experienced dizziness due to 3 tonnes (approximately 3000 kilograms) of styrene leaking from the plant¹.

¹Sumit Bhattacharjee, Vishakapatnam gas leak: How negligence and violations led to a deadly disaster (6 June, 2020), <https://www.thehindu.com/news/cities/Visakhapatnam/visakhapatnam-gas-leak-how-negligence-and-violations-led-to-a-deadly-disaster/article31761949.ece/>

2.1. Cause of the gas leak

The plant was undergoing the process of start-up for the first time in 40 days. Due to the lockdown, it is possible that polymerisation of styrene in the tank occurred unnoticed. There have been reports² that some valves had failed to function at the time of start-up and the process of de-clogging these valves might have resulted in them giving way for the liquid styrene to leak. Additionally, the container that was being used to store styrene gas was old and not maintained properly.

The escape of the liquid streamed is what could have led to sudden turbulence and mixing in the tank, which in turn could have led to violent polymerisation and thus rapidly increase the inner temperature. Consequently, the same could have caused the vaporisation of styrene. This increase in temperature could have been mitigated had the refrigeration system been functioning, but because it was not, the styrene vapours escaped from their container into the atmosphere.

2.2. Background of the gas

Styrene is an organic compound that is naturally found in a liquid form but can vaporise at high temperatures. Styrene usually becomes inert (inactive) after being exposed to the air for a long period of time. However, styrene is highly reactive and can combine with oxygen to form lethal, explosive styrene dioxide. The presence of other pollutants in the atmosphere can also have an effect on its strength and reactivity³.

A single styrene molecule will typically try to combine with another styrene molecule to make long styrene chains, especially at temperatures over 65°C. This process, known as polymerisation, is exothermic (releases heat) and must be prevented. According to the preliminary findings of the Andhra Forensic Science Laboratory⁴, the gas leaked from one of the storage tanks through polymerisation as its temperature was not maintained below 20°C and there had been no auto-polymerisation inhibitors added to the tank.

2.3. Effects of the gas leak

²Amitabh Sinha, An Expert Explains: What can go wrong with styrene?, <https://indianexpress.com/article/explained/vizag-gas-leak-styrene-lg-polymers-visakhapatnam-6427103/>

³ Anonymous, Gas leak in Vizag: A factsheet by Centre for Science and Environment, <https://www.nationalheraldindia.com/india/gas-leak-in-vizag-a-factsheet-by-centre-for-science-and-environment>

⁴ U. Sudhakar Reddy, Human error, negligence led to Vizag gas leak: Forensic report (May 11, 2020), <https://timesofindia.indiatimes.com/india/human-error-negligence-led-to-vizag-gas-leak-forensic-report/articleshow/75666352.cms>

At least 15 people, including two minors, living near the plant lost their lives while they were sleeping. More than a thousand people were admitted to the hospital after the incident⁵. Additionally, 32 animals, including cattle, were also killed⁶.

The health impact of styrene on humans differs depending on the duration of exposure. The oral toxicity of styrene is low and its ingestion in small doses is unlikely to cause grave harm. Ingestion of large amounts of styrene may cause irritation of the eyes, mouth and gastrointestinal tract. However, aspiration into the lungs may cause chemical pneumonitis, which can be fatal⁷.

One of the biggest challenges faced during a disaster of such nature is that its effects are mostly unknown at the immediate time and tend to go undetected. As was noticed in the aftermath of the Bhopal Gas Tragedy⁸, those who resided near the Union Carbide plant, in the span of the next few decades, were diagnosed with cancer, pulmonary diseases and chest infections to name a few. The newer generations were not spared either, being diagnosed with learning disabilities and physical deformities. Although styrene has not been proven to be nearly as deadly as methyl isocyanate, only time will truly tell what cost the residents of Vizag must pay and for how long they will be paying it.

3. LEGAL IMPLICATIONS OF THE VIZAG GAS LEAK

The day of the gas leak, an FIR had been registered against LG Polymers by the Gopalapatnam police in Visakhapatnam with respect to the incident. The National Green Tribunal (hereafter known as the NGT) took *suo motu* cognizance of the matter and issued notices ordering the factory to deposit an initial amount of ₹50 crores for the damage caused⁹.

⁵ Vizag gas leak death toll touches 11 (Jun 4, 2020), <https://www.deccanchronicle.com/nation/current-affairs/070520/fresh-details-on-vizags-gas-horror-death-toll-5-but-likely-to-rise.html>

⁶ Visakhapatnam gas leak kills 32 animals, 199 treated, says Animal Husbandry Department (May 9, 2020), <https://www.newindianexpress.com/states/andhra-pradesh/2020/may/09/visakhapatnam-gas-leak-kills-32-animals-199-treated-says-animal-husbandry-department-2141035.html>

⁷ Dr H.C. Srivastava, *ISC Chemistry* (11th ed. 2017).

⁸ *Union Carbide Commission v. Union Of India*, 1995 Supp (4) SCC 59.

⁹ Utpal Bhaskar, *LG Polymers admits leaking vapor from gas storage tank caused Vizag tragedy* (9 May, 2020), <https://www.livemint.com/news/india/lg-polymers-admits-leaking-vapor-from-gas-storage-tank-caused-vizag-tragedy-11589009346537.html>

On May 19th 2020, when questions of law surrounding the jurisdiction and legalities of the NGT were raised before the Hon'ble Supreme Court, the Hon'ble Court refused to intervene in the matter and directed them to raise their contention before the NGT instead¹⁰.

On May 24th 2020, the High Court issued an order to seal the plant. On 26th May 2020, the Supreme Court permitted thirty people from LG Polymers to access the plant. However, on 15th June 2020, Advocate Mukul Rohatgi, the advocate appearing on behalf of LG Polymers, insisted that the District Magistrate had disallowed entry of two personnel despite the permission of the Supreme Court. Additionally, he urged the bench to stay the aforementioned sealing order, contending that it was unconstitutional. The same was rejected by the High Court of Andhra Pradesh.

Almost exactly a year ago, in an affidavit¹¹ that formed a part of an application for their federal environmental clearance, LG Polymers stated that the company “does not have a valid environmental clearance substantiating the produced quantity, issued by the competent authority, for continuing operations”. The same affidavit also mentions that although LG Chemicals expanded its operations at the LG Polymers plant five times between the years 2006 and 2018, it apparently had never received environmental clearance¹². Even though there has been no evidence that the lack of such a clearance played a role in Vizag gas leak, the very fact that the plant operated for so long without a viable clearance or permit shows that most environmental laws and regulations, while strong and sensible, are usually not implemented strictly enough to avoid future consequences.

3.1. IPC violations

The FIR against LG Polymers was registered under sections 278, 284, 285, 304-A, 337 and 338 of the Indian Penal Code (hereafter referred to as the IPC).

3.1.1. Section 278

Section 278 of the IPC deals with **making the atmosphere noxious** (toxic) to health. It states that whoever voluntarily vitiates (reduces the quality of) the atmosphere in any place to make

¹⁰ Radhika Roy, Vizag Gas Leak: SC agrees To Permit 30 Personnel From LG Polymers To Access The Chemical Plant (26 May, 2020), <https://www.livelaw.in/top-stories/vizag-gas-leak-sc-agrees-to-permit-30-personnel-from-lg-polymers-to-access-the-chemical-plant-157327/>

¹¹ Aniruddha Ghosal & Emily Schmall, Indian LG Plant Lacked Environmental Clearance Before Leak (May 12 2020), <https://www.usnews.com/news/business/articles/2020-05-12/indian-lg-plant-lacked-environmental-clearance-before-leak0>

¹² Indian LG plant lacked environmental clearance before leak (May 12, 2020), <https://www.cnn.com/2020/05/13/indian-lg-plant-lacked-environmental-clearance-before-leak.html>

it noxious to the health of people in the general dwelling, carrying on business in the neighbourhood or passing along a public way shall be punished with fine which may extend to five hundred rupees.

As previously discussed, styrene is known to have harmful effects when released into the atmosphere. The styrene released from the LG Polymers plant made the air in the surrounding area harmful for consumption. Those who lived in the area near the plant were affected the most and faced multiple deaths and injuries. LG Polymers should thus be held liable under this provision.

3.1.2. Section 284

Section 284 of the IPC deals with **negligent conduct with respect to poisonous substances**. It holds liable whoever, with any poisonous substance, acts-

- i) in a rash or negligent manner so as to endanger human life
- ii) in a manner that is likely to cause hurt or injury to any person
- iii) knowingly or negligently and omits to sufficiently guard any poisonous substance in his possession to avoid probable danger to human life

All accidents have an intrinsic component of negligence. In the current scenario, several standard precautions to contain the poisonous substance were missed, including the practice of analysing the contents of the storage tanks daily for oxygen, inhibitor and polymer concentrations. Another necessity is to monitor the temperature inside the tank regularly and keep it low with continuous refrigeration. These measures were not checked either.

3.1.3. Section 285

Section 285 of the IPC deals with **negligent conduct with respect to fire or combustible matter**. It states that whoever does, with fire or any combustible matter,-

- i) any act so rashly or negligently that it endangers human life
- ii) any act that is likely to cause hurt or injury to any other person
- iii) knowingly or negligently omits to take such order with any fire or any combustible matter in his possession as is sufficient to guard against any probable danger to human life from such fire or combustible matter,

Styrene is a highly combustible substance¹³. At elevated temperatures such as in fire conditions, the polymerization of styrene can lead to container explosion. The styrene leakage from the LG Polymers plant was a result of negligence from its workers concerning styrene, a substance that is flammable and hence dangerous. A recent study¹⁴ found that LG Chemicals had attempted to take a post-facto environmental clearance from the Ministry of Environment, Forest and Climate Change after the Vizag gas leak took place, probably as an attempt to escape liability or to have the amount of damages they must eventually pay be reduced.

3.1.4. Section 304-A

The Central Bureau of Investigation had initially charged LG Polymers under Section 304 of the IPC, which deals with culpable homicide not amounting to murder. The charges were later re-framed under Section 304A, which deals with **death due to negligence**.

In the context of the Bhopal Gas Tragedy, the Supreme Court held¹⁵ that there was no evidence to show that any of the accused knew that methyl isocyanate, a dangerous and highly volatile substance, was stored and thus did not know that they were likely to cause the death of any human being. Thus, the Supreme Court directed that the charges be re-framed under section 304-A of the IPC. Since then, it has become a norm to frame charges against those accused of causing industrial disasters under death due to negligence rather than culpable homicide not amounting to murder.

In order for inadvertent polymerisation of styrene to take place, temperatures must rise very slowly. Thus, there is enough notice and warning to be aware of the rising temperature and avoid its consequences. Even in the absence of an inhibitor, it takes around 25 days for the temperature in the tank to increase from 20°C to 30°C. Periodic monitoring is all that is required to ensure safety. This monitoring was evidently not carried out. The LG Polymers plant must, therefore, be held responsible under section 304-A of the Penal Code.

3.1.5. Section 337

Section 337 states that whoever **causes hurt to any person** by acting so rashly or negligently that it endangers human life or the personal safety of others will be punished with imprisonment

¹³ Styrene Monomer, Stabilized, <https://cameochemicals.noaa.gov/chemical/4553>

¹⁴ Shreya Kaushik, Could Financial Sector Vigilance Have Avoided Vizag Gas Leak? (20 June, 2020), <https://www.newsclick.in/could-financial-sector-vigilance-avoided-vizag-gas-leak>

¹⁵ Ibid.

of a term which may extend to six months, with fine which may extend to five hundred rupees, or with both.

In addition to the lack of refrigeration and low inhibitor concentration, the Andhra Pradesh High Court noted the following¹⁶-

- i) LG Polymers had been operating without a valid Environmental Clearance from the Ministry of Environment, Forests and Climate Change
- ii) The radius of the vulnerable zone was extended up to 6.3 km from the source
- iii) The bystander population should have been informed of the risk they were in and trained in evacuation procedure in the event of an accident¹⁷
- iv) The siren/alarm system did not function

Hurt, under the IPC¹⁸, includes bodily pain, disease and infirmity. Many people suffered bodily pain due to styrene leakage. This could, in the future, lead to more serious diseases such as bronchitis or asthma. It thus makes sense for LG Polymers to be held liable under this section.

Not only was the gas leak dangerous as an isolated event, but LG Polymers failed to meet multiple safety standards that could have had dire consequences at any point in the future. Their actions, or lack thereof, could at any point have caused gross hurt to everyone who lived in the vicinity of the LG Polymers plant. Any corporation which deals with hazardous waste or substances that could very easily compromise the health and safety of the persons not only working in the corporation but also residing in the surrounding areas owes an absolute duty to its community. It is their job to ensure that no danger befalls anyone because of the unsafe acts taking place.

3.1.6. Section 338

Section 338 of the IPC states that whoever causes **grievous hurt** to any person by acting so rashly or negligently as to endanger human life or the personal safety of others will be punished with imprisonment of either description for a term which may extend to two years, with a fine which may extend to one thousand rupees, or with both.

¹⁶ Anonymous, Vizag Gas Leak: AP HC Directs Seizure Of LG Polymers Premises; Restrains Directors From Leaving Country (24 May, 2020), <https://www.livelaw.in/top-stories/vizag-gas-leak-ap-hc-directs-seizure-of-lg-polymers-premises-restrains-directors-from-leaving-country-157247>

¹⁷ Section 13(2), Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

¹⁸ Section 319, The Indian Penal Code 1960

This provision lays down clearly that only an act that is ‘so rashly or negligently as to endanger human life or the personal safety of others’ shall be punished. Thus, it lays down the standard of criminal negligence intended to distinguish between those whose failure is culpable and those whose conduct is not deserving of punishment¹⁹.

Grievous hurt includes²⁰ any act which endangers life and causes bodily pain for a period of not less than 20 days. The current gas leak has indeed endangered the lives of the Vizag residents, causing pain in the eyes, nasal passage, lungs and other body parts. Just like other industrial disasters, it will most likely have consequences in the future and not less than a mere 20 days.

3.2. Strict and Absolute liability

One of the main issues which the Vizag leak raises is that of absolute liability. This principle evolved in India primarily because of the damage caused by the Bhopal Gas Tragedy and the Oleum Gas Leak²¹. Additionally, absolute liability emerged as an extension of the concept of strict liability.

Strict liability arises when a person or corporation uses their land in a non-natural manner and the dangerous object in the land escapes and leads to harm or damage to another person’s life or property. The principle of absolute liability states that when an organisation is engaged in inherently dangerous activities and if any harm results in the process, the organisation is absolutely liable to compensate for such harm.

It is rather easy to confuse strict liability and absolute liability, but there do exist differences between the two. It can be said that absolute liability is a more severe form of strict liability. Moreover, unlike strict liability, for which only substantial damages are awarded, absolute liability entails exemplary damages along with substantial damages.

When a person or corporation is strictly liable for the escape of a dangerous object, they can cite five defences, namely-

- i) the escape was a result of an act done by God
- ii) the escape was a result of a third-party act

¹⁹ P. B. Desai v. State Of Maharashtra, (2013) 15 SCC 481.

²⁰ Section 320, The Indian Penal Code 1960.

²¹ M.C. Mehta v. Union Of India, 1987 SCR (1) 819.

- iii) the escape is the plaintiff (the accuser)'s own fault
- iv) the escape was a result of an act done by a government official
- v) the dangerous object in the land benefitted the plaintiff as well

On the other hand, when an organisation is held to be absolutely liable, they cannot cite any of the aforementioned defences as a defence.

It could be argued that the COVID-19 pandemic is an Act of God because it was beyond human control and no sort of human care or skill could have resisted the virus from spreading throughout the nation. Under many circumstances, such as lease agreements, the pandemic is indeed considered an Act of God. Despite this, in the present case, the isolated incident of styrene leakage was not a direct result of the pandemic. The pandemic was the cause of lockdowns, not the lack of maintenance. Thus, the defense of Act of God does not cover the current gas leak. None of the other four defenses apply either. Moreover, even if they technically did, they could not be used by LG Polymers as a defense in a court of law.

On June 3rd, 2020, the NGT stated that LG Polymers has absolute liability for the loss of life and public health²². In such industries, a person who brings on to his land anything likely to do harm, escape and cause damage to another is liable to compensate for the damage caused²³. They must try to anticipate the worst that could happen even if it is highly unlikely and not only guard against it, but prepare to contain it and make sure that there is no way for it to take place.

Absolute liability can be applied even if there is no negligence on part of the accused. The defences available under strict liability do not apply to absolute liability. This means that it would be no good defence to argue that the direct cause of the accident was actually an Act of God or a result of third party intervention. The defendant has absolute liability for the act that has wreaked havoc and cannot escape by saying that they took all the reasonable care on behalf of his part²⁴. Even if they were to state that they had taken all reasonable care and that the harm occurred without any negligence on its part, they will be held absolutely accountable.

3.3. Other legislations

²² Vizag Gas Leak: LG Polymers India has Absolute Liability, Says NGT (Jun 3, 2020), <https://thewire.in/law/vizag-gas-leak-lg-polymers-ngt>

²³ Rylands v. Fletcher, 1868 LR 3 HL 330.

²⁴ Charan Lal Sahu v. Union of India, AIR 1990 SC 1480 .

In the time of the Bhopal Gas Tragedy, the IPC was the only existing legislation that contained provisions dealing with negligence, culpable homicide and pollution. As a result, multiple legislations had been passed in various spheres such as victim compensation, environmental protection and corporate liability to ensure that no aspect of such tragedies were left out.

3.3.1. The Public Liability Insurance Act, 1991

The Public Liability Insurance Act, 1991 was enacted to provide immediate relief to those who had been victims of various accidents that occurred while handling any hazardous substances. Its main aim is to deliver mandatory public liability insurance. Under section 3 of the Act²⁵, any person who is not a workman who has suffered death, injury or damage to their property due to the actions of the company is liable to receive relief. This person does not have to plead or establish that the death, injury or damage was due to any wrongful act, neglect or default of any person. As per section 6 of the Act²⁶, this person need only make an application for a claim for relief. This application must be made on behalf of or for the benefit of all the legal representatives of the deceased. The legal representatives who have not been joined will be impleaded (have legal proceedings against them) as respondents to the application.

The most important aspect of this legislation is that, under section 4²⁷, it makes it compulsory for every owner to give out one or more insurance policies providing for contracts of insurance in the event that he or she must provide relief to an aggrieved party. Every owner must get their insurance policy renewed from time to time before the expiry of validity. This is to make sure that the insurance policies remain in force throughout the period during which the handling of hazardous substances occurs. No insurance policy taken out or renewed by an owner should be for an amount less than the amount of the paid-up capital of the undertaking handling any hazardous substance. Furthermore, there is a cap for the total outgo for one accident to be ₹50 crores.

As per section 11 of the Act²⁸, if a person, authorised by the Central Government has reason to believe that the handling of any hazardous substance is taking place, he or she may enter into and search the place to see if their handling of the hazardous substance violates any provisions of the Act. If it does, the authority may seize the hazardous substance and anything which, in their opinion, will be useful for any proceeding against them. If it is not feasible to seize the

²⁵ Section 3, The Public Liability Insurance Act, 1991.

²⁶ Section 6, The Public Liability Insurance Act, 1991.

²⁷ Section 4, The Public Liability Insurance Act, 1991.

²⁸ Section 11, The Public Liability Insurance Act, 1991.

substance, he or she can serve the owner an order to not remove, or deal with the substance without the permission of the authority.

Thus, the Act strives to protect any person who suffered without making them have to suffer further by undergoing mental distress by pleading. In a way, it also protects the corporation held liable by implementing a limit to the amount it must pay to the injured. In the present case, the Act did ensure that LG Polymers paid the sum of ₹50 crores, which goes to show that the legislation is not a mere piece of paper and is truly effective.

3.3.2. The Environment Protection Act, 1986

The Environment Protection Act, 1986 was passed as a result of the Bhopal Gas Leak, under the Constitution²⁹ to implement the decisions made at the United Nations Conference of 1972 based on the human environment. The legislation was a way to not only implement India's promises for protecting the environment but to also bring about a change to the environmental laws and flaws on them brought about by the tragedy.

The Act implements limitations on emission or discharge of pollutants from industries, prescribing emission of smoke, etc. from vehicles and even contains a list of authorities that can be approached if anyone is caught exceeding these limits.

The Act gives the Central Government a great deal of power to take all necessary steps required for the protection of the environment. It also has laid down the safety standards and limits for the presence of various pollutants in the environment.

If a person wishes to use, manage or handle any hazardous material, they must compulsorily obtain prior permission from the Central Government for the same, as per the Act. Moreover, it enables the Central Government to assign authorities in various jurisdictions to carry out the laws of this Act³⁰.

Under section 25 of the Environment Protection Act, 1986, another set of rules was passed known as the Hazardous Waste (Management and Handling) Rules, 1989. It includes the process of management of 18 different categories of waste, the toxic chemicals which can be stored in industries and used for different purposes. It issues the notification that the person or

²⁹ Article 253, The Constitution of India 1950.

³⁰ Saurab Babu, [India's Environment Protection Act, 1986– An overview](https://eco-intelligent.com/2017/12/04/indias-environment-protection-act-1986/) (Dec 4, 2017), <https://eco-intelligent.com/2017/12/04/indias-environment-protection-act-1986/>

persons who are generating this kind of waste or working the facility which generates this kind of waste will be responsible for the proper management and handling of the same.

Thus, the legislation imposes liability upon the owner and/or handler of toxic waste. Therefore, under the Environment Protection Act, 1986, LG Polymers must be held liable completely for the Vizag Gas Leak.

4. INFLUENCE OF THE COVID-19 PANDEMIC

The Vizag Gas Leak occurred in phase 3 of the national lockdown. Under regular circumstances, the gas leak would probably have had more extensive media coverage and thus more awareness amongst the general public. However, considering that the nation, and the world, was anxious and in quarantine, a toxic gas leak seemed to be the least of everybody's problems despite the fact that a gas leak is far more dangerous than a virus with a 4% death rate. Besides, unlike a viral infection, there is no way to prevent being affected by a noxious gas if it spreads near your vicinity. Furthermore, self-evacuation would have been impossible given that, at the time, all airlines had been shut down. If an evacuation would have been unavoidable, housing the victims would have been another challenge to face, especially under the special circumstances of the time.

Unfortunately, those who reside near the LG Polymers plant face two battles- one against the gas leak and the other against COVID-19. Even though the area around Vishakapatnam was not highly affected by the virus at the time, respiratory infection from styrene³¹ increases the chance of developing respiratory complications and fatalities arising from the COVID-19 virus³². If the gas were to be as toxic as methyl isocyanate or oleum, the consequences would have been far more disastrous. Hospitals were over-crowded with COVID-19 patients and an overpopulation with more victims of the gas leak would have led to a spike in the number of positive COVID-19 cases. Perhaps if the gas leak had occurred in or near a city or large town that was highly affected by COVID-19, more people would have been harmed by both the gas and the virus, which would have led to a greater outcry and thus could have led to the incident receiving more attention.

³¹ Public Health Statement for Styrene, Agency for Toxic Substances and Disease Registry (June 2012), <https://www.atsdr.cdc.gov/phs/phs.asp?id=419&tid=74#:~:text=Inhalation%3A%20When%20you%20breathe%20air,body%20through%20the%20digestive%20tract>

³² Coronavirus Complications: How Does COVID-19 Affect Your Lungs?, Narayana Health (Apr 23, 2020), <https://www.narayanahealth.org/blog/how-covid-19-affect-your-lungs/>

Since the LG Polymers plant was under start-up after a period of 40 days due to the implementation of the first two lockdowns, it can be argued that the Vizag Gas Leak would not have occurred at all if there had been no national lockdown executed in the first place. If some of the workers had been granted permission to access the plant during these forty days, perhaps somebody would have noticed the flaws in maintaining styrene and could have thereby prevented the accident. Nevertheless, the pandemic and lockdown should not be used as an excuse by the company to escape any liability.

Many of the residents of the area who were not immediately affected by the gas face the challenge of post-leak complications. Even after nearly two months, victims are suffering from issues such as eye irritation and weakness. The medicines prescribed to them provided only temporary relief from their pain³³ and are not viable solutions to prevent long-term conditions. In the global rush to find a cure or vaccine for the coronavirus, Indian doctors and hospitals have pulled all the stops to make sure that they can save COVID-19 patients as quickly as possible and by the looks of it have neglected the medical necessities of those affected by other conditions or gases. Nevertheless, no blame must be placed on the medical practitioners as they are overworked and overburdened by the ever-increasing number of COVID-19 patients and put their own lives at risk every single day to keep the death rate of the nation as low as possible. It does, however, seem as though the cries of the affected were hushed in an effort to sensationalise the COVID-19 pandemic to a greater degree.

5. CONCLUSION

The chemical industry has been handling styrene for decades now. In recent years, the safety measures taken by the chemical industry have increased significantly due to the use of technology. However, many manufacturing plants are old and their owners are reluctant to invest in capital to revamp or rebuild them.

Urban populations have encroached on spaces that were originally demarcated for industry, including the buffer and green-zones that all chemical industries had been mandated to follow. If we have learned anything from our past, it is that local governments must not allow industrial facilities to be situated within urban areas regardless of the evolution of land use over time

³³ [Vizag Gas Leak Victims Demand Better Medicare](https://www.newindianexpress.com/states/andhra-pradesh/2020/jun/03/vizag-gas-leak-victims-demand-better-medicare-2151521.html) (June 3, 2020), <https://www.newindianexpress.com/states/andhra-pradesh/2020/jun/03/vizag-gas-leak-victims-demand-better-medicare-2151521.html>.

In India, most of the chemical manufacturing is carried out in the small and medium sectors. These sectors have limited ability to invest in industrial and environmental safety as well as occupational health. Additionally, there exists a tendency to skip long-term training and skill development of workers by resorting to casual labour in the operational area. If these practices continue, the chemical industry will face a severe shortage of skilled operating personnel in the years to come.

The Vizag Gas Leak is a warning sign that must not be ignored. When the Indian economy was thriving, the wellbeing of the environment and the public was what was at risk. Unsurprisingly, the deterioration of the economy due to the pandemic is what it took to protect the environment and the public from pollution. The increase in the number of hazardous industries, processes and operations in India has been accompanied by an equal increase in the number of accidents to the members of the general vicinity as well as the labourers who are employed to handle toxic substances. A lot more has to be done for public health and welfare of those who reside in danger-prone areas. As the Hon'ble Justice P.N. Bhagwati once said, we can only hope to reduce the element of hazard or risk to the community by taking all necessary steps for locating such industries in a matter which would pose the least risk of danger to the community and maximizing safety requirements in such industries. Consequently, what is of supreme importance is to devise ways to ensure justice for the victims of the gas leak in the long-run and to make sure that their relief and rehabilitation needs are appropriately met.