

Odorant Leak Management

- All around the world, propane, butane and natural gas must be odorized. The odorization ensures a safe transport, distribution and use of this valuable energy to residential buildings. Regulations vary from one country or state to another. The natural gas can be odorized at different points of the gas grid.
- From the production of odorant blends' components to the odorant storages at consumption points, there is a broad and complex supply chain to bring the right odorant at the right place and at the right time, safely and without odor incidents.

Case

Date:
23rd June 2006

Where in the supply chain?
During the transportation of odorant from the port to the local distributor's plant.

Location:
Sao Paulo, Brazil on the fast track Marginal Pinheiros, after the Garden City bridge



Source : Arkema

Consequences

- 1) About 420kg (935 lbs) of TBM and 800kg (1,765 lbs) of DMS spilled in the environment
- 2) A 8 kilometers section of a main highway in the heart of Sao Paulo was shut down from 4:30 am until 12:00pm.

Conclusion

The emergency response was quite well managed, with a great coordination of several different agencies and emergency response organizations. The most difficult part was the spill into the river, which could not be prevented. Dilution and natural degradation solved the potential odor issues.

Case

Date

19th May 2009

Where in the supply chain?

At a Gas firm odorant injection site during a scheduled maintenance

Location

Shah Alam City Gate, in Kuala Lumpur area, Malaysia.



S. Lavanya vomited after Tuesday's incident.

Source : New Straits Times



Consequences

- 1) Neighbors immediately thought there was a gas leak. The local utility denied there was a gas leak.
- 2) 70 pupils at a nearby school, only 300 meters from the City gate station, fell ill and had difficulties breathing. They smelled something “pungent” in the air. Pupils complained of dizziness. 20 of them fainted after inhaling this pungent “gas”. Those feeling unwell were taken to the hospital, while others went back home.
- 3) People were also very frightened as there were rumors of a “potential bomb” attack.
- 4) The following days, the local community was angry: some parents gathered at a local natural gas city gate station to protest against this leak resulting in their children being rushed to a hospital. Parent-teacher association filled a police report against the owner of the station as well as initiated legal proceedings.

Conclusions

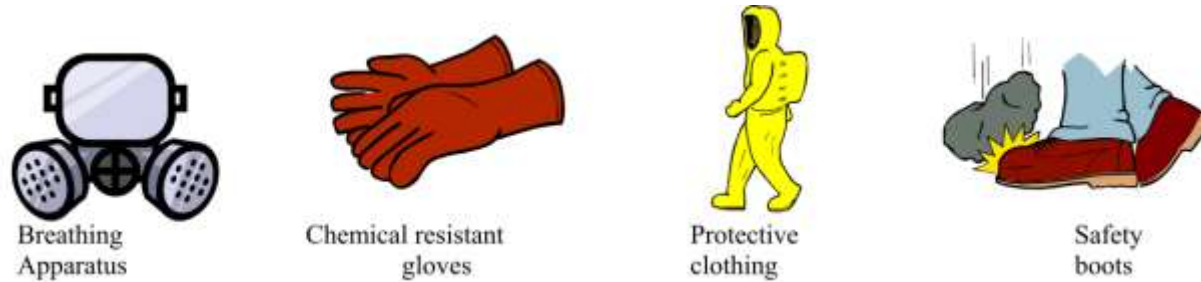
Medical check-ups and any related medical expenses were taken in charge by the Gas utility. In addition to this medical aid, they carried out community service projects at the school and provided corrective and preventive reports to reassure that this would not happen again.

ODORANT SPILL RESPONSE

1. As soon as an obnoxious odor is detected, it is essential to immediately leave to fresh air and get equipped with a breathing apparatus. You must check the validity of the filtering media and train employee working on a gas utility site on how putting this mask properly. You should have on site additional masks in case an odorant leak happens while contractors or visitors are presents.
2. Notify immediately the accidental release to the area safety manager and coordinate with the fire brigade and local authorities. Your response plan should clearly mention and keep up to date the names of the managers of these different entities. A priority order should be set-up.
3. Evacuate non-essential staff and those not equipped with individual protection apparatus. Define in the response plan who is supposed to lead and coordinate the emergency response plan and which personnel should be dismissed immediately.
4. Delimit a safety zone. The size will be determined according to the extent of the leakage. You must have on-site the necessary equipment to delimit this safety zone.
5. Read the Safety Data Sheet (SDS) of the concerned products. The SDS should be available at the city gate of the gas utility of the Liquefied Petroleum storing site. SDS content is regulated by each country.
6. In addition to the breathing apparatus, wear the appropriate Personal Protective Equipment (PPE), Figure 2 below, before going into the polluted site.

ODORANT SPILL RESPONSE

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7. Insure all draining systems are closed in case of a liquid leak in a retaining area.
8. Control the explosive nature of the contaminated atmosphere before any intervention: use a gas odorant sensitive explosimeter. Within the odorant explosive limits, either ventilate the contaminated area, or vacuum the vapors where emitted, until being under the lower odorant explosive limit. In any case, prohibit sources of ignition and sparks. By definition, gas odorants are flammable products: Do not smoke, use no sparking tools, and avoid accumulation of static electricity by grounding the equipment.

SPILL MANAGEMENT

Main steps

Once immediate precautions to protect people from flammable, explosion and chemical risk are taken, then here are a few spill

management basic steps:

1. **STOP** the leak: you have to spot the source of the leak and stop it
2. **CONTAIN** the spill: you can use dike pigs to prevent the liquid to spread further
3. **ABSORB** the spill: you can use absorbent powder or pads
4. **NEUTRALIZE** the odor: you can use a neutralizing or a masking agent to efficiently neutralize the odorant smell
5. **DISPOSE** of the material: you can use over-drum. Wastes are to be processed by a specialized company.