

## **PROBLEM STATEMENT**

### **GAS LEAKAGE MONITORING AND ALERTING SYSTEM FOR INDUSTRIES**

- Gas leakage is a major problem with industrial sector, residential premises and gas-powered vehicles like CNG (compressed natural gas) buses, cars. One of the preventive methods to stop accident associated with the gas leakage is to install gas leakage detection kit at vulnerable places. No technology is a hundred percent safe, and accidents can occur anytime.
- Occurrence of Gas Leakage:
  1. Non- human intervention (Natural causes) – There are some accidents which are caused, even though we take utmost care to prevent it. We cannot control nature or its phenomenon, and hence, we have no control over such accidents. The only measure we can take in such a situation is to mitigate the losses. These accidents may be generally caused by earthquakes, flood, heavy lightning, etc.
  2. Human intervention – These are those accidents which are caused due to human intervention and such accidents could be prevented.
- Reason for Gas Leakage:
  1. Lack of safety measures – This is one of the most important reasons behind any accident. Industries and factories spend a huge amount of money on the structure, but they do not spend much on safety measures.
  2. Lack of technology – It is another reason for gas leak accidents. Once a machine is brought, owners do not want to spend any extra penny on those machines. They are ignorant about upgrading their technology.
  3. Lack of skills – In some occasions, recruiters hire inexperienced workers and engineers, who have no or little knowledge of operating machines and handling emergency situation.
  4. Negligence/ Carelessness – It is one of the main reasons for accidents. It is often seen that workers or engineers left the machines unattended and they malfunctioned to cause fatal accidents. Many times, exhaust stop working, and because of it, the internal temperature of machines rises and after an extent, they explode. It results in escaping of deadly gases.
- Impact of Accidents:
  1. Immediate impact - The immediate effect mainly includes burns, deformities, accidents and even deaths. A lot of poisonous, deadly or harmful gases may escape, endangering our lives. Some of these gases may be so acidic, that if humans got in contact with them, it might result in severe burn injury or even in death in some cases.
  2. Long Term Impact:
    - a. Pollution – This is one of the major consequences of such accidents. It is seen that once such an accident occurs, gases do escape in the environment, and they remain in the environment for a very long time. They may not be that harmful, but they do affect our lives adversely.
    - b. Child with abnormalities – It is also seen that these gases are harmful to living creatures. They also cause harm to unborn children as well as new-born babies, because they have less immunity. Children are also getting diseased as well as they are also suffering from many abnormalities in their body which are making their lives harder.
    - c. Migration – Hundreds and thousands of people are forced to leave their home and live like migrated people with no proper food and other necessities.

- Motive to Prevent Gas Leakage:
  1. Gas leak detection services are necessary mainly for health reasons. Gas leaks can also cause health issues in the long term from gradual exposure. Some gas leaks are even silent killers. In addition to being dangerous for your well-being, gas leaks are threatening for your finances. Repairing damage caused by gas leaks can be expensive, time-consuming, frustrating, and can expose you to more detrimental substances.
  2. If you don't have gas leak detection services to determine the origin of the problem, effects of the leak could occur again, costing you, even more, money.
  3. Gas leaks occur more commonly in the workplace than in homes. In order to eliminate personnel and property hazards, you should follow strict OSHA standards for gas leak detection to ensure everyone and everything are kept safe. Gas leaks can contaminate the work area, destroy materials and equipment, and cause workers to quit due to concern. In some cases, gas leaks equal higher energy costs. If the gas is leaking from a fuel system for machinery or power, it can cause the equipment to work too hard, resulting in more frequent repairs and higher gas costs.
  4. In addition to providing physical gas leak detection services, we can also provide you with gas detectors for your workplace or home. Since many dangerous gases cannot be detected by scent, people are unknowingly exposed to damaging gases that can eventually or immediately cause harm to their minds and injury to their bodies.