IOT BASED GAS LEAKAGE MONITORING & ALERTING SYSTEM

OBJECTIVE

The principle of operation of IOT based gas leakage and monitoring system was shown by operating the Arduino (UNO-1) model attached with embedded system with required input and output gas level with the help of gas sensors.

PROBLEM

In pipelines gas transfer, gas leakage is inevitable as there is a necessity of joints and other transmission components. The gas leakage up to a certain mass level can be ignored, however it is very important to raise an alarm if it surpasses certain threshold values.

OUTCOME

This results in a more efficient in operation because it is connected to a common web page specially built to notify or email the responsible authority automatically so reduces the stress of constant monitoring.

LITERATURE SURVEY

SURVEY 1

A.**Mahalingam**, r. T. **Naayagi**, n. E. **Mastorakis**; they introduce design and implementation of an economic gas leakage detector. They gave the formulation of many problems in previous gas leakage detectors. They told that several standards have been formulated for the design of a gas leakage detection system such as IEEE, BS 5730, and IEC.For this work, the recommended UK safety standards have been adopted. The proposed alarm system is mainly meant to detect LPG leakage, which is most commonly used in residential and commercial premises. The system detects not only the presence of gas (gas leak), but also the amount of leakage in the air, and accordingly raises an appropriate audio visual alarm. The objective of the system is to detect LPG gases such as propane and butane. The allowed UK level for butane is 600 ppm above which it is considered to be of high level and poses a danger. The proposed system ensures a continuous monitoring of the gas levels. If the gas level increases above the normal threshold level of 400 ppm butane (LPG), the system starts to issue early warning alarms at 100ms interval, which implies low level gas leakage. If the leakage level increases to 575 ppm of butane (LPG), the system

activates high severity audio alarms at 50 ms intervals warning the occupants to run to safety

SURVEY 2

B. B. Did paye, Prof. S. K. Nanda; in this paper they told about their research on leakage detection and review of"Automated unified system for LPG using microcontroller and GSM module". Their paper proposed an advance and innovative approach for LPG leakage detection,prevention and automatic booking for refill. In advance, the system provides the automatic controlling of LPG regulator also if leakage is detected the system will automatically turn off the main switch of power supply. Hence it helps to avoid the explosion and blast.

SURVEY 3

Srinivasan, Leela, Jeya bharathi, Kirthik,Rajasree; in this research paper they told about gas leakage detection and control. In this paper, the gas leakage resulting into fatal inferno has become a serious problem in household and other areas where household gas is handled and used. It alerts the subscriber through the alarm and the status display besides turning off the gas supply valve as a primary safety measure.

SURVEY 4

Pal-Stefan Murvaya, Ioan Sileaa, 2008, they told in their survey on gas leak detection and localization techniques various ways to detect the gas leakage. They introduce some old or new technique to detect the gas. The proposed techniques in this paper are nontechnical methods, hardware based methods which include acoustic methods, optical methods and active methods. In their survey they told a wide variety of leak detecting techniques is available for gas pipelines. Some techniques have been improved since their first proposal and some new ones were designed as a result of advances in sensor manufacturing and computing power. However, each detection method comes with its advantages and disadvantages. Leak detection techniques in each category share some advantages and disadvantages

SURVEY 5

Falohun A.S., Oke A.O., and Abolaji B.M. 2016, in this paper they proposed their dangerous gas detection using an integrated circuit and MQ-9. In this basically, they used an embedded design which includes typical input and output devices include switches, relays, solenoids, LEDs, small or custom LCD displays, radio frequency devices, and sensors for data such as temperature, humidity, light level etc. Embedded systems usually have no keyboard, screen, disks, printers, or other recognizable I/O devices of a personal computer, and may lack human interaction device. The amount and type of detectors and the type of fire alarm system that one chooses for property

protection will depend on the owner's property protection goals, the value of the property and the requirements of the owner's insurance company.

FUTURE SCOPE

◆ A Mobile Application can be created for this system which can give information about the concentration of gas present in the area, setting reminders to check gas level, also to predict the gas leak by giving values.

◆ The use of Pressure sensor along with the system can provide an extra feature of Automatic Gas Booking. Like other sensors, the pressure sensor can constantly monitor the amount of gas present in cylinder and send a booking SMS if it reaches certain level.

CONCLUSION

◆ As a result of this,the damages caused by the leakage of gas is increasing day by day. So as to eradicate this problems we are introducing highly advanced system known as Internet Of Things(IOT) .

◆ So it is mainly designed for the safety of people and property.Thus people could easily use their time effectively. It also uses to alert the consumers about the wastage of gas while removing the utensils from the burner by using an object detection sensor.

Team members

Team Leader   : SARAN S
Team Member 1   : KISHORE AHMET K H
Team Member2   : KARTHIKEYAN S
Team Member3   : PRAVA V