

Abstract

Pollution is an evitable consequence of modern industrial technology, rapid and convenient transport and comfortable housing, but excessive pollution is detrimental to health and socio-economical well-being. The three major types of pollution are air pollution, water pollution, and land pollution. Among these water and land pollution may be considered as local pollution whereas air pollution is considered as global pollution because air has no boundaries.

Mitigating the adverse environmental and health effects associated with economic development through timely and cost-effective programs should be a high priority for developing countries, for both local and global reasons. The challenges for the developing countries are to benefit from the experience of the industrialized countries, avoid their mistakes, and establish the basis for sound economic development while preserving human health and the quality of the environment. Each country of course will face unique problems, but all countries that wish to ensure environmental quality will have to make the commitment to do so, a high priority.

Air pollution levels in most Indian cities are going up and in many cases exceed recommended limits. Industries are one of the most important sources of air pollution and petrochemical industries are categorized as polluting industries. This project has been taken for studying the air emissions in a petrochemical complex

Key features of the project include:

1. Literature survey on the aspects of air pollution, petrochemical industry and different control technologies for pollution reduction.

2. Monitoring, which is an important aspect of the study that involves ambient and stack air quality monitoring.
3. Non-point source emissions also called as Fugitive Emissions that cover a major part of the industrial air pollution.
4. Different monitoring and inspection technologies available for fugitive emissions control.
5. LDAR (Leak Detection & Repair) program.

The air pollution quality and quantity varies from season to season in any petrochemical industry. Petrochemical industries have major air pollutants like Sox, NO_x, hydrocarbons, SPM, ammonia, chlorine and HCl.

For ambient air quality monitoring, location of the stations is very important. Petrochemical complex understudy has 5 stations near the periphery of the complex, 2 in the upward wind direction, two in the downward wind direction and one in the centre. The concentration of the pollutants monitored for stack specific parameters in the ambient air is much below than the statutory standards.

Fugitive emissions (hydrocarbons), a major part of air pollutants in a petrochemical complex is difficult to control. Based on the LDAR program implemented in the complex understudy, major fugitive/VOC emissions are from the process equipment area which consists of different equipments, drains, vents, sampling points, connectors, open ended lines, etc. Among these most of the vents have been directed towards flare but some of the other vents and some sampling points are leaking more and that should be inspected/monitored on a frequent basis.

Key Words : Industrial air pollution, Pollution in petrochemical industry, Ambient air quality monitoring..