*First International Seminar, **SAFE '99**, on Safety & Fire Engineering, Cochin, India, November 24-26, 1999*

Invited Paper

LATEST TRENDS IN FIRE PROTECTION AND DETECTION SYSTEMS FOR THE INDIAN INDUSTRY

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Losses to life and property due to fire has gone up by leaps and bounds. The reasons are either individuals ignorance to safety aspects or designers not providing the right choice of fire protection systems for the risk protected. Today the choice of products available to the fire protection industry is unlimited but one should be careful while selecting the product depending upon the risk projected. The product should be thoroughly understood for its application along with its usage limitations.

The fire protection systems can be broadly divided into two parts:

1. Active Systems
2. Passive Systems

Again, Active Systems can be segregated into two parts:

1. Fire Detection and Alarm Systems
2. Fire Protection Systems.

We will first deal with fire detection and alarm systems.

As of today the latest trend in this field are the development of:

1. Analogue Fire Detection and Alarm Systems.
2. Intelligent Fire Detection and Alarm Systems

In the analogue systems we have Addressable Ionization, Optical, Heat Detectors and Manual Call Point which are connected to Microprocessor based Control Panels.

Distinct advantages of these systems are:

1. A zone known as a loop can accommodate 126 Devices.
2. The location of fire can be pin pointed.
3. LCD displays on panel can identify the detector which has activated.
4. Panel accommodates variations in climatic conditions which otherwise effects operation of detectors.

5. Threshold values are programmed in the panel for detector operation.
6. Zones can be isolated using isolators for maintenance of detectors. This facilitates operation of other devices in the Loop.
7. Existing conventional systems can be connected to this system.

The Intelligent Fire Detection and Alarm systems, the most sophisticated and hi – tech system available today is also known as 100% false Alarm Free Fire Detection and Alarm Systems. In this system, besides the advantages mentioned above, the detectors have in built microprocessors which are programmed with preset tested algorithms. The detectors themselves have the capabilities to distinguish false alarms from true alarms. In this system individual detectors can be taken out for servicing/maintenance without disturbing the rest of the system.

The other innovative Fire Detection Products now available are:

- Linear Heat Sensing cables – for cables galleries, cable tunnels and conveyors.
- Aspiration Systems – for warehouses and duct monitoring.
- VESDA Systems – for computer rooms and other high valued clean areas.
- Beam Directors – for high ceilings storage areas.

In the Fire Protection part the old saying still holds good which says 'Old is Gold' but some latest trends that are available:

1. Fast Response Sprinklers.
2. Esternally Reset Deluge Valves.
3. Pre Action Deluge Valves.
4. Fire Trace.

As in the gas suppression systems after usage of halon gases have been limited due to ozone depletion, the following alternatives listed in NFPA 2001, have been popular in our country:

a. FM 200 Gas
b. Inergen
c. Argonite

As mentioned earlier a number of products are available but the selection criteria depending upon the risk to be protected is to be carefully studied.