**INDUSTRY-SPECIFIC INTELLIGENT FIRE MANAGEMENT SYSTEM**

**PROBLEM STATEMENT:**

* Under the rather broad heading of fire protection systems, this module will examine the main components of alerting, suppression, and containment features and systems.
* Consideration of these systems is a natural adjunct to a discussion of hazards and building construction features.
* The primary components we will examine are fire alarm systems, fire detection and notification systems, suppression agents and systems, water distribution systems, automatic sprinkler systems, standpipe and hose systems, and portable fire extinguishers.
* This module will cover a lot of basic material meant to provide the novice inspector a solid foundation on which to build.
* As was said in the earlier modules, it is only a beginning.

**IDEA/SOLUTION DESCRIPTION:**

* Water is the most common fire extinguishing agent used because it has several features that make it a desirable extinguishing agent.
* CO2 is a substance with many commercial uses. Perhaps the most familiar is the carbonation in soda pop and other carbonated beverages.
* Halon is a fire extinguishing agent commonly used to protect electronic and electrical equipment, surface burning solids such as some plastics, flammable liquids, and gases.
* The source of a utility's water varies around the country, and perhaps even within smaller geographic areas. The two sources for water supply systems are ground water and surface water. Although most water systems have only one source, there are instances of both.
* Fix the fire alarm every units for factories.
* Automatic sprinkler systems are the most common automatic fire suppression systems.

**UNIQUENESS:**

* For the most part, extinguishers that use water are for use on Class A fires.
* CO2 extinguishes fire primarily by excluding oxygen from the combustion region, although there is some cooling effect.
* Ordinary dry chemical agents include sodium bicarbonate, potassium bicarbonate, urea-potassium bicarbonate, and potassium chloride. They are effective on Class B and Class C fires.
* Halon 1211 can be used in portable fire extinguishers because it is not as volatile as Halon 1301 which instantly becomes gaseous when discharged.

**SOCIAL IMPACT/CUSTOMER SATISFACTION:**

* An understanding of the different types of fire protection systems, equipment, and water distribution in your protection area is of the utmost importance.
* Your fire department depends on these systems for the basic needs of fire protection and fighting fire.
* Your ability to identify the various components of these systems and to inspect them for operational readiness may mean the difference between life and death should the systems be needed.

**DESIGN MODEL:**

* Heat detectors commonly are used to detect fires. They are not as prone to false alarms and are less expensive than smoke detectors.
* Fusible-element type mechanisms use a eutectic alloy that melts rapidly at a predetermined fixed temperature.
* Rate-compensated heat detectors respond to a given temperature of the surrounding air regardless of the rate at which the temperature rises.
* Combination heat detectors can combine the two operating principles of reaching a fixed temperature and reaching a set rate of rise.

**SCALABILITY OF SOLLUTION:**

* The task of a fire-fighting system is to early detect and minimise the consequences of a fire, and thus protect people and property. Simple fire-fighting systems consist of a fire and smoke detector, a control panel and fixed fire-fighting systems.
* Fire-fighting systems may be divided into four main types, depending on the applied extinguishing agent: water, water mist, foam and gas extinguishing systems.