CUSTOMER SUCCESS STORY

VESDA PREVENTS NUISANCE FIRE ALARMS WHILE PROTECTING STAFF, FLAMMABLE STOCK AND EQUIPMENT IN WAREHOUSE

The Challenge

JSP Foam Products' new plastics storage warehouse needed a fire protection system that could cope with the detection difficulties within the warehouse—high ceilings, dust and silo packs. "My main concern was that the harsh and dusty conditions in the warehouse would lead to frequent and costly false alarms", said Mr Oikawa, Managing Director of JSP Foam Products.

The possibility of extending the flame detection system, already installed in the rest of the facility, was quickly ruled out. This type of detector would not function adequately in a warehouse environment for the following reasons:

- Even small smoldering plastics-fuelled fires generate large amounts of smoke, often long before any flames become visible. Smoke is highly toxic and corrosive to electrical equipment and represents a serious health hazard to the warehouse employees
- By the time flames appear there could be so much smoke from burning plastics that the flames would be obscured, thereby delaying or totally preventing detection
- Stored goods could block the line of sight of the optical detectors. Numerous detectors, in many locations, would be necessary to adequately cover the protected area
- Maintenance access to flame detectors would be awkward due to the stored goods

PROJECT:
JSP Foam Products Pte Ltd

END USER/LOCATION:
Singapore

INDUSTRY:
Plastics Manufacturing

SOLUTION:
VESDA VLP
VESDA VLF-250

"We have easy access for maintenance without any disruption to the warehouse operations."

Mr Kow
Senior Production/Engineering Manager
JSP Foam Products Pte Ltd

Conventional spot type smoke detection technologies were also ruled out for the following reasons:

- The high level of dust within the warehouse would lead to frequent nuisance alarms
- Air movement, caused by ventilation or drafts from open doors, would dilute smoke and move it away from detectors, delaying or preventing detection
- Smoke from a smoldering, plastics-fuelled fire would be unlikely to possess the thermal energy needed to lift it up to the high warehouse ceiling. Instead, the smoke would form layers below ceiling level, never making it to the detector on the ceiling
- Their relatively low sensitivity would allow a fire to grow and spread further before it was detected. Thus, increasing the risk to personnel and potential stock damage
- Access for maintenance and testing could be difficult due to the impedence from storage racks
- Frequent maintenance is required due to the high levels of dust, increasing cost-of-ownership

The Solution

What was needed was a fire protection solution combining the following features:

- Tolerance to nuisance alarms
- High sensitivity for very early smoke detection to maximise staff safety and minimise stock or equipment damage
- Ease of access for maintenance
- Damage resistance

It was decided, after a demonstration by a local loss prevention engineering company, ProVision Technology (Asia Pacific) Pte Ltd, in the JSP warehouse, that the VESDA Aspirating Smoke Detection system could provide all of the above. When Mr Kow, Senior Production/Engineering Manager at JSP, really put the VESDA detector through its paces, by blowing dust into the VESDA sampling pipe, he was delighted to discover that no nuisance alarm was issued.

Four VESDA detectors are now installed in the JSP warehouse. Two VESDA VLP detectors protect both levels of the warehouse and two VESDA VLF detectors protect the electrical panels and other main equipment controls. All of these detectors are linked for remote monitoring purposes.

The Result

The occurrence of nuisance alarms was initially JSP's greatest concern. However, even deliberately blowing dust into the VESDA sample pipe failed to induce a false alarm. The VESDA system has multiple alarm levels that can be programmed to make allowances for high background pollution levels.

Thus, contrary to common belief, the high sensitivity of VESDA detectors does not make them prone to false alarms.

What high sensitivity does mean, however, is that fire events can be detected and dealt with while they are still small; before stock damage or interruption to the normal operation of the warehouse can occur. VESDA sampling points have been installed close to likely sources of fire, such as the electrical panel and other equipment, This improves the speed of detection. "We have ease of mind that the warehouse is adequately protected, by the VESDA system, and remotely monitored" remarked Mr. Kow, Senior Production/Engineering Manager of JSP Foam Products.

VESDA systems cope well in the challenging warehouse environment. Active sampling of air, via the sampling pipes, draws smoke in rather than waiting for it to enter the detector on its own.

The VESDA detectors have been mounted in easily accessible locations. Only the sample pipes run above the storage areas. This means that the detectors are both protected from damage and more conveniently placed for maintenance.