EFFECTIVE RESPONSE TO A FIRE – ASD SOLUTION AND PROJECT EXAMPLES PART 2

To continue the previous discussion arounod the code requirements and the latest standard for implementing effective response to a fire event.

In this article, I will share some industry practices of the Aspirating Smoke Detection (ASD) systems solution to be used as Effective Response.

ASD SOLUTION FOR AN EFFECTIVE RESPONSE

Aspirating smoke detection (ASD) systems comprise extremely sensitivity detection chambers that draw air samples from multiple sampling points to deliver early or very early detection of fires. The majority, however, of standard ASD systems provide detection zone or room level addressability confined to the entirety of detector sampling points.

Certain ASDs have multiple detection addresses delivering smaller detection zones (and annunciation)from a single device. For example, "Sector Addressability", found on the VESDA-E VES detector, provides alarm annunciation per individual sampling pipe allowing a detection zone to be segregated into 4"sectors" with each sector capable of protecting spaces up to 500m2 and offering individual pipe alarm threshold setting and stages alarms. In this application, it might be the isles of a warehouse; data centre containment aisles, rooms in a building or ceiling and floor voids. By utilising the sector addressability approach in the design, the ASD detector can better direct very early warning response.

The next step in reducing the detection zone size is to use an individual detector per zone. This can be achieved with an individual spot detector or by using an ASD solution that offers individual sampling hole addressability (where the solution provides an output per sampling point). The VESDA-E VEA provides"sampling point addressability" via 40 addressable sampling points connected to a centralised detector. Each VEA sampling point delivers the same addressability to spot detectors with the added benefit of centralised test and maintenance.

An ASD approach with addressable capability delivers the following benefits:

• Enhanced detection (VEWFD/EWFD) for early warning and early response to a potential fire event.

- Simplified maintenance at a centralized detector that can be located in an easy to access location.

- Flexible options in the placement and location of sampling pipe and sampling points; especially useful in hard to reach locations or where environmental conditions (e.g. temperature, humidity) are challenging

PROJECT EXAMPLES

Clinton Library, Little Rock, AK, USA

Clinton Library, Little Rock, AK, USAThe William Jefferson Clinton Presidential Center and Library offers an interactive educational centre displaying memorabilia. It consists of archiving rooms and displaying rooms with 40 staff supporting the operation.

Customer requirements included a fire detection system that could provide very early warning from 8 logical zones (compartments) under different ambient background levels to allow early response from the staff in the event of a fire. Two VESDA VLS detectors (precursor to the VESDA-E VES with sector addressability) provided the 8 zones of addressability; and the earliest possible detection in each zone with the ability to set different alarm thresholds adjusted to different ambient background levels. Read the full success story here

Sonora Behavioral Health, AZ, USA

Sonora Behavioral Health, AZ, USASonora Behavioral Health is a psychiatric facility in Tucson, AZ, a part of the larger Acadia Healthcare Group. The major challenges, as described by the Facility Director/Safety Officer, are disruption to the patients, doctors, nurses and operations from service and inspection associated with conventional fire detection systems.

Five VESDA-E VEA detector systems with multi-point addressability were selected to protect the patient rooms allowing system test and maintenance to be conducted outside the protected areas; therefore, reducing disruption to patients and medical operations. For more details of the Sonora Behavioral Health story read here

Queensland Coal Export Terminal, QLD, Australia

VESDA VLS integrated with a gas suppression protects this coal export terminal in one of the largest multi-commodity ports in Queensland Australia. The VLS, with multiple sector addresses, provides early warning fire detection for individual rows of electrical HV cabinets where there is a higher level of fire risk.A fire incident (due to a faulty contact in one of the cabinets) was detected by the VLS that initiated gas suppression to prevent further escalation. According to the fire system contract administrator, "there was no downtime or lost production and with a short time a replacement breaker was fitted and the equipment returned for general operation". More details of the story can be accessed here.
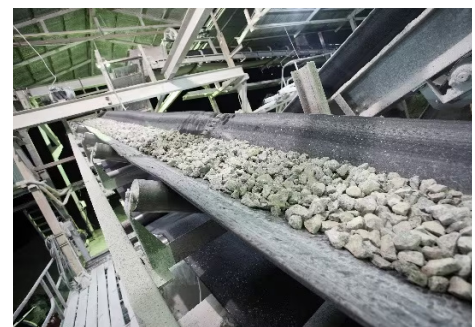
If you have projects needing detection addressability from small compartments and VEWFD/EWFD, please contact us here

Honeywell