

SUCCESS STORY

FIRE SYSTEMS PREVENT FIRE AT QUEENSLAND COAL EXPORT TERMINAL

In late 2013 a fire was prevented at one of Queensland's largest multi-commodity ports through the use of a very early warning smoke detection system (VESDA VLS) integrated with gas suppression. The VESDA VLS smoke detector signaled an alarm indicating smoke had been detected in an activated zone within the facility. The alarm alerted the fire services and enabled targeted automatic suppression to extinguish the smoke. The Queensland Fire and Emergency Service (QFES) was notified immediately and responded to the automated alarm arriving on site within 6 minutes. Upon closer investigation of the VLS detector event log by fire contractors it was uncovered that a smouldering contactor within a switch room cabinet was the cause. With a minor production equipment reconfiguration there was no downtime or lost production and within a short time a replacement breaker was fitted and the equipment returned for general operation.

THE INCIDENT

Upon arrival at the incident area the external "Do Not Enter Inergen Discharged" sign was illuminated. Once this had been identified the QFES officers fitted their respiratory equipment to enable entry into the building so they could ascertain the extent of the situation.

Armed with an array of heat sensing and atmospheric analysing equipment the QFES officers monitored the area for signs of an ignition point of which they did not find so they ventilated the area and then cleared it safe for entry.

THE CAUSE

The QFES could not pinpoint an ignition source as there was no heat or smoke when they arrived so they handed the site over to the company management for further investigation. It wasn't until the maintenance contractor further interrogated the VLS that they were able to identify the faulty contactor located in the activated zone of the VLS. The Very Early Warning Smoke Detection combined with Gas Suppression was able to reduce the potential damage to critical equipment caused by a fire. In this case, replacement of an electrical contactor was all that was needed.

The configuration of the VESDA VLS is such that the entire room is protected with atmospheric monitoring on one sample pipe with the other sample pipes being plumbed directly into 415v, 3.3kv and 11kv electrical HV cubicles where there is a higher level of risk.

VESDA®



The cubicle switch gear is monitored through capillary tubes from the VESDA pipe work with each bank of HV cubicles having its own “Alarm Zone” and dedicated Inergen cylinder bank plumbed directly into the cubicles.

This configuration has an added benefit of not only supplying the minimum required amount of Inergen to extinguish the ignition source before the situation escalates but also assists maintenance in identifying the fault area.

THE OUTCOME

According to the fire system contract administrator at the coal terminal:

“The combined use of the VESDA detection sampling within the cubicle and the Inergen suppression is extremely effective in reducing equipment damage by immediately detecting an incident then extinguishing it by initially cooling the area and then removing the combustible atmosphere to prevent secondary ignition until first response is in attendance. With a minor production equipment reconfiguration there was no downtime or lost production and within a short time a replacement breaker was fitted and the equipment returned for general operation.”

Project:

Very early warning detection for a switch room

End User/Location:

Queensland, Australia

Industry:

Transportation, Port facility

Installation Partner:

Wormald
Tyco

Solution:

VESDA VLS

Benefits:

- Very early warning smoke detection
- Integration with suppression systems
- No downtime or lost production