Case Study

HMA
INSTRUMENTATION

AUTOMATED FIRE PROTECTION AND DETECTION SYSTEM RESPONDS TO CHALLENGE

HMA installs a state of the art Det-tronics fire detection system in a large oil refinery

Location	Sydney, NSW Australia
Industry	Oil & Gas
Client	Oil Refinery

OVERVIEW

In 2012 a large refinery in New South Wales came to a realisation – it needed to convert to a fuel tank farm and subsequently reduce staffing levels. Such a significant change would inevitably lead to the challenge of upgrading its fire protection and detection systems, to allow the site to become more automated and responsive in emergency situations. The refinery turned to industrial instrumentation specialist HMA to mitigate against fire hazards and risks.

CHALLENGE

"The refinery needed to automate a significant amount of the site, which in turn meant reducing maintenance personnel and time across all its equipment, including fire equipment," says Simon Burns, General Manager at HMA Instrumentation.

"They originally had limited fire detection equipment that wasn't responsive enough. With nobody on site it is essential to be notified of incidents very quickly, but the system they had in place was too slow."

SOLUTION

HMA set about overcoming the challenge by offering the latest state of the art fire and gas detection equipment and control system with low false alarm and fast response times. The total package included 90 PIRECL gas detectors, 60 X3301 flame detectors and 4 EQP controllers. Det-Tronics fire and gas detectors are certified to the latest worldwide product approval standards including IECEx and SIL-2 third party are certified to the latest worldwide product approvals including IECEx and SIL-2 third party certification.

"All controllers and detectors were IECEx certified for use in the oil and gas industry. The system utilised LON (Local Operating Network) wiring loop architecture to reduce cabling runs and installation costs," Burns says.

"Other devices operating in the field have a wire that connects to the device and another wire that comes back, whereas the X3301 and PIRECL detectors together with the controller and other field devices. This provides a major cost saving on cabling and installation.

"This technology proved ideal because there were long distances of up to five kilometres between devices. Using traditional system architecture the cabling cost would have exceeded the project's budget."

TECHNOLOGY

Det-Tronics flame detectors are specifically designed for areas where the risk to personnel is high and where fire might result in a catastrophic loss of equipment. Det-Tronics X3301 flame detectors utilise triple IR detection with patented algorithms. This provides industry-leading false alarm rejection, while maintaining fast response times.

"The algorithm determines when flickering indicates fire. The integrated gas detection systems are also explosion proof and suitable for hazardous areas," Burns says. "The product we offer is the best on the market within the oil and gas industry. HMA Instrumentation sells this product exclusively in Australia and New Zealand."

RESULT

The refinery was able to continue with its plan to automate the site and reduce maintenance costs as planned. "The client was very happy with the design and reduced installation costs compared to other systems, due to the LON loop. They are now looking to add to the system with their site expansion," Burns says.

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