50,000m² Automated Cold Storage Facility

Location:
Brazil

Industry:
Port/Warehouse, Cold Storage

Premises:
- Equipment supporting temperatures of -27°C
- Early warning detection required
- Unified smoke and leak detection of ammonia and hydrogen

Solutions:
- VESDA VLP-400
- VESDA VLC-505
- VESDA VLF-500
- VESDA ECO – Ammonia & Hydrogen

Benefits:
- Dual 24/7 early warning gas and smoke detection
- Tolerance of harsh and dirty environments
- Better area coverage and protection through multi-hole air sampling
- 25% reduction in installation costs
- Simplified installation, maintenance and service
- Lower total cost of ownership

Large Refrigerator Terminal, Brazil

Building the port terminal in Brazil began in 1998 with the acquisition of land in the region along the banks of a major river. With the support of local leaders, determined entrepreneurs started developing the project and three years later, the refrigerator terminal was born. Construction was completed in 2007 paving the way to generating foreign exchange and strengthening the trade balance. Today's port serves as a center for storing, handling, distribution and consolidation of reefer cargo, offering solutions that integrate national and international management and logistics, such as road transport, customs clearance and ship chartering.

The terminal began operating as a cold storage facility in January 2009. Its automated cold storage chamber covers an area of nearly 50,000 m², with static storage capacity of 18,000 ton. From January through October 2009, the port handled 101,500 ton of cargo, generating gross revenues of more than 15 million from trading and storage activities.

In 2009, the terminal succumbed to a fire which called for the rebuilding of the vertical storage facility, which began in May 2010. The company was determined not to suffer such losses a second time and decided to investigate alternative smoke detection systems.

Compared to the previous storage facility, which was completely destroyed, VESDA very early warning aspirating smoke detection was chosen to protect the warehouse after representatives from the project firm and distributor consulted with local companies and determined that the VESDA plus VESDA ECO system not only met their specifications but offered greater value.

It was critical to the terminal to have superior smoke detection, but they also needed to monitor the environment for traces of gas, specifically Ammonia as accidental releases of Ammonia from refrigeration facilities is harmful to area workers in both liquid and vapor forms. In 2011, five VESDA VLP, one VESDA VLC, and four VESDA VLF aspirating smoke detection units were deployed in the 50,000 m² warehouse within the port. Due to the nature of the cold storage technology, VESDA ECO units were fitted on the air-sampling units – eleven units in total to detect Ammonia levels. The decision was made based on the VESDA reputation, but also as a cost effective solution. Rather than install multiple spot and Ammonia detectors and a central gas control panel, the cold storage warehouse is being protected by single source smoke and gas detection for a total installation cost savings of over 25% while eliminating the guess work for detector placement.

> **"**
> Our facility is a unique application. We saw many point gas detectors but only Xtralis offered ASD gas detectors which provided us greater coverage in the facility and cost savings on the installation and maintenance".

Incidentally, the terminal's battery room was also in need of protection and was in the process of evaluating options for this area. However, when all the parties involved in this project learned about gas detection solutions from Xtralis and the fact that VESDA was already was being used in other areas of the warehouse, they took a hard look at a new proposal for VESDA ECO. Pleased with the installation and performance of the VESDA ECO throughout the storage area of the warehouse, the terminal elected to also implement VESDA ECO in their battery room for Hydrogen monitoring.

VESDA ECO is an innovative approach to gas detection that combines aspirating smoke detection (ASD) with gas detection and environmental monitoring. It utilizes a VESDA pipe network to actively sample air for the presence of smoke as well as combustible or toxic gases or for oxygen deprived areas. Each VESDA ECO detector can house up to two gas sensors, and additional detectors can be added easily to the pipe network to monitor for more gases if required and provide point, zone or total area coverage.

VESDA ECO reduces the total cost of system installation, maintenance and service because fewer detectors are required. The gas detection solution can be added to a new VESDA ASD system or easily retrofitted to an existing VESDA ASD system without major construction or the addition of electrical wiring and conduit.

In addition to dual protection, better coverage and performance through multi-hole air sampling is achieved. VESDA ECO provides features such as on-board data logging that is not available with most point gas detectors on the market today. It also integrates with other building management systems (FACP, PLC, HVAC and BMS) to deliver real-time situational awareness and intelligent emergency response, including the use of demand-controlled ventilation to save energy and control costs.