

Borealis Chooses Safety Manager for Remote Cavern Installation

Case Study

Honeywell's Remote Universal Safety I/O gives Borealis ultimate freedom to place safety I/O in remote locations.

- Marcus Hedlund, Expert Process Control & APC Network Leader

Background

Borealis, a leading provider of innovative solutions in the fields of polyolefin, base chemicals and fertilizers, is headquartered in Vienna, Austria. Borealis operates in over 120 countries with approximately 6,500 employees worldwide.

The company offers a wide range of base chemicals, including melamine, phenol, acetone, ethylene and propylene, servicing a wide range of industries.

Borealis also creates real value for the agricultural industry with a large portfolio of fertilizers, distributing approximately 2.1 million tons per year. The company generated EUR 7.7 billion in sales revenue and a net profit of EUR 988 million in 2015.

Borealis provides services and products to customers around the world in collaboration with Borouge, a joint venture with the Abu Dhabi National Oil Company (ADNOC).

The International Petroleum Investment Company (IPIC) of Abu Dhabi owns 64% of the company, with the remaining 36% belonging to OMV, an international, integrated oil and gas company based in Vienna.



The Stenungsund cracker plant is one of the most flexible in Europe, using naphtha, ethane, propane and butane as feedstock.

Challenge

Borealis invested EUR 7.8 million to convert a naphtha cavern to butane use in its Stenungsund steam cracker plant. The new cavern is by far the largest in Europe and will further optimize the plant's feed flexibility.

The company needed to implement cost-effective safety capabilities for its remote cavern installation.

The cavern location is quite remote and creating an infrastructure that would sustain a full Safety Manager node on FTE would require a rather expensive infrastructure.

Borealis, Sweden

Borealis, the only polyethylene producer in Sweden, is located in Stenungsund, 50 km north of Gothenburg, where Borealis is the largest employer in the city's industrial cluster.

Principally focused on wire and cable, and pipe manufacturing, Borealis in Sweden supports customers with specialty plastics for some of the largest energy supply, oil and water pipeline projects in the world.

The Stenungsund location has installed a wide variety of Honeywell solutions, from basic controllers to the latest Honeywell process control systems. Borealis has implemented Honeywell's Fail Safe Controller and Safety manager at the site.

Solution

Borealis determined that Safety Manager with Remote Universal I/O is the best solution for their situation, providing a cost-effective fiber optic cable installation.

Plants and refineries use Honeywell's safety instrumented system (SIS) platform, Safety Manager, to safeguard their assets and to share critical safety information with process control systems.

This system helps them prevent and mitigate safety incidents by protecting equipment, monitoring for fire and gas leaks, and maintaining critical control functions.

The Safety Manager Universal I/O module is designed for harsh environments, such as Borealis' Stenungsund cavern. An increasing focus on safety has led to a greater need for Safety Integrity Level (SIL) certified systems that can operate in tough environmental conditions. Safety Manager's Universal I/O module is SIL-3 certified, by Germany-based TÜV Rheinland.

Benefits

The Universal I/O module helps facilities more easily expand the Safety Manager solution. Typical I/O modules are wired to control rooms through junction boxes and marshalling cabinets. By using soft-marshalling, the Honeywell Universal Safety I/O module can be mounted close to the process unit, eliminating the need for marshalling panels and

homerun cables, and reducing or eliminating field auxiliary rooms. This approach reduces overall capital expenditure, engineering cost, as well as maintenance costs.

The high-density module is based on Honeywell's Universal Channel Technology—each channel can be configured individually to a different I/O type, which provides manufacturers more flexibility to design safety solutions that are uniquely suited to their needs.

Results

The project was very successful and was trouble free from day one," according to Tomas Tejder, Borealis team. The savings in infrastructure and the peace of mind derived from the solution have enabled Borealis to solve the issue with a simple proven add on to an existing Safety Manager. This solution complies with the latest safety regulations and offers full compliance to the safety standard IEC61508.

All safety functions can be programmed in one environment, with seamless integration of the Safety Manager into the Experion PKS system. The integration provides time synchronization, alarm management, sequence of event, and diagnostics.

Summary

Borealis has signed a 10-year contract, and has purchased eight additional Safety Managers, some of which are also equipped with Remote Universal Safety I/O. During the contract period, Honeywell will replace all older safety systems at the Stenungsund location.

For More Information

Learn more about how Honeywell's Safety Manager can safeguard your assets, visit honeywellsms.com contact your Honeywell Account Manager, Distributor or System Integrator.

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