

# F&G System Upgrade Improves Safety at Petrochemical Plant

## Case Study

### Petrochemical Corporation of Singapore Invests in Plant and Personnel Safety with Installation of State-of-the-Art Fire and Gas System

#### Background

Petrochemical Corporation of Singapore Pte Ltd. (PCS) is a major producer of ethylene, propylene, acetylene, butadiene, 1-butene, MTBE, benzene, toluene and xylene, and was facing issues with their aging fire and gas system originally installed 20 years earlier. The system was out of date, unreliable, and spare parts were hard to come by. Spotty support further put the operation at risk. Having strong experience with the existing Honeywell DCS, PCS requested Honeywell to study and upgrade the fire and gas system to the state-of-the-art Honeywell XLS 3000 Fire and Gas system with a proven track record for reliability. Since the field devices were up to date and performing to expectations, PCS limited the project scope to study and upgrade only the main F&G Controller and the IO components.

#### Challenge

Since the project scope was to replace only the controller and not the entire F&G system the challenge became to decommission the old system, and install new wiring between the existing field devices and the new XLS 3000 controller with the I/O components, without disrupting operations. To ensure system integrity the new wiring had to exactly match the old. The existing equipment including Gas Detectors, Manual Call Points, SAP, Traffic Control, and Solenoid Valves had to remain in place and undisturbed to ensure uninterrupted fire and gas protection.

#### Solution

PCS required that the new fire alarm panel provide the same functionality as the existing panel and more. Following evaluation of several offerings, PCS selected the Honeywell XLS 3000 Fire and Gas System based on its capabilities, reliability and field-proven track record. In addition, PCS installed Honeywell's EBI R410 SCADA system with HMI Graphics. The new panels were connected to the network via fiber optic cables. Honeywell took responsibility for the installation, testing and startup of the entire system.



#### XLS3000

The Honeywell XLS3000, part of the XLS Series of products, is an intelligent Fire Alarm Control Panel designed for medium to large-scale facilities. Fire emergency detection and evacuation are extremely critical to life safety, and the XLS3000 is ideally suited for these applications.

#### SMART

*SMART is Honeywell technology to track the required installation, inspection, testing and maintenance frequencies of your Fire Alarm System. With the Honeywell System Maintenance and Reporting Tool (SMART), a first in the industry, the XLS3000 system is capable of reporting the maintenance history of each field device, thus simplifying the Testing and Inspection requirements mandated by NFPA. When a device exceeds the NFPA testing limits, the user is alerted by an indication on the control panel that service should be performed. This feature can be used by operations and maintenance alike to insure that proper maintenance is being performed on the system.*

The XLS3000 solution was a very good fit for the PCS project as its modular design could be specifically configured to meet the PCS project-specific requirements. With one to ten Signaling Line Circuits (SLCs), the XLS3000 supports up to 3,180 intelligent addressable devices.

The large 640-character Liquid Crystal Display (LCD) of XLS3000 presents vital information to PCS operators concerning a fire situation, fire progression, and evacuation details in case of an event. The display allows up to nine users, each with a unique password and pre-determined access levels. The display has 11 LED indicators including Power • Supervisory • Point Disabled • Fire Alarm • System Trouble • CPU Failure • Pre-Alarm • Other Event • Controls Active • Security • and, Signals Silenced.

Membrane switches are used for Acknowledge, Signal Silence, Drill, System Reset, and Lamp Test. The XLS3000 is designed to meet most global agency listing and approvals.

Honeywell also provided the Enterprise Buildings Integrator (EBI) R410 SCADA system with graphic operator interface, seamlessly integrated with the XLS3000. EBI R410 is a highly configurable integrated building management system providing an efficient and reliable means to ensure the security, safety and comfort of people and the effective operation of the PCS plant facilities. Its integrated Life Safety Manager provides operators, supervisors, and managers with a sophisticated web-style interface to enable PCS personnel to easily monitor the fire alarm system from a single interface during emergency situations.

## For More Information

To learn more about how Honeywell's Fire & Gas safety systems can benefit your operations visit our website [Safety Solutions](#) or contact your Honeywell Account Manager, Distributor or System Integrator.

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## Benefits

PCS cited significant advantages that the system upgrade delivered vs the old, outdated system:

- Robust design ensures safety of plant personnel and assets
- User friendly operator interface with high resolution graphics.
- Field-proven reliability results in less downtime
- Strong local Honeywell support provided by factory-trained experts
- Reduced spare parts and maintenance costs
- Easy integration for future expansion

## Summary

PCS reports renewed plant safety confidence since installation of the XLS3000 Fire and Gas system. The integration of the alarm panels with the Enterprise Buildings Integrator SCADA system provides operations with an intuitive display of critical parameters in case of events.

Honeywell offers best-in-class technology and expertise for industrial fire and gas. Our Fire & Gas solutions are based on a layered approach to safety, encompassing both process and system technology, and the people who interact with that technology. We provide systems enabling you to monitor areas where hazardous levels of explosive or toxic gas may become present, and provide early warning of the build-up of gas or fire before it becomes a hazard.

Honeywell's extensive portfolio of F&G solutions includes Safety Manager, SIL3-certified safety systems; toxic gas, flame and smoke detectors; fire alarm panels; camera systems, sounders and beacons; and other critical components seamlessly integrated with Experion PKS in the overall control and safety concept of a plant.

**Honeywell**