



Terminal Operator Improves Fire & Gas Performance with Expert 3D Mapping Service

Case Study

“Honeywell’s F&G solution will optimize the selection and deployment of fixed gas detectors at a new, world-scale petrochemical and liquefied gas terminal in Egypt.”

Background

Sonker Bunkering Company S.A.E. is an Egyptian storage and bunkering company established in 2003 and operating at the Ain Sokhna Port on the Red Sea, Egypt. Sonker is planning to construct and operate a world-scale petrochemical and liquefied gas tank terminal in the harbor area of Ain-Sokhna, Egypt. This terminal will serve as the main supply to the Egyptian network for gasoil and liquefied petroleum gas (LPG).



Figure1: Sonker Bunkering Company will operate a major oil and gas tank terminal at Ain-Sokhna, Egypt.

LPG carrier ships will unload propane, butane or LPG at the Sokhna jetty into three refrigerated storage tanks. Process facilities will be installed to enable the LPG to be pumped from the storage tanks, mixed, heated and exported into an existing LPG transmission system via new pipelines. The terminal will also receive gasoil, which will be unloaded and stored in roof tanks prior to export via pipeline.

Challenges

Like other oil and gas industry projects, the Sokhna terminal involved significant commercial and technical risk. Terminal operators seek increased safety and reliability, reduced costs, less downtime, fewer fines, and lower insurance

premiums.

Even with the most experienced system designers, proper tools and methodologies are essential to qualitatively and quantitatively evaluate fire and gas (F&G) detection coverage at oil and gas terminals. Today’s advanced F&G detectors can provide early warnings of explosive and health hazards, including combustible and toxic gas releases, thermal radiation from fires and minute traces of smoke in sensitive equipment enclosures. They also help to ensure operators and personnel are informed of potentially hazardous situations.

For Sonker, the main challenge was to design and implement an effective fire and gas system through 3D mapping/modeling based on available inputs. This included a comprehensive F&G mapping analysis to measure and report on detection coverage, and then provide recommendations for installation of fixed gas detectors to meet the ISA 84.00.07 standard. Detector type, range setting, quantity, and angle/position allocation must be considered within the context of the overall system design.

At the Sokhna terminal, the automation supplier would not only have to provide expert fire and gas mapping and other services, but also meet a short delivery deadline for necessary F&G systems and equipment.

Solution

Sonker chose Honeywell to provide an integrated fire and gas solution for its strategically important terminal project. Honeywell’s holistic approach as a “one-stop-shop” supplier for all F&G systems and services was key to its selection as automation contractor.

A well-designed fire and gas detection system is critical, not just for protecting terminal facilities and personnel, but also the surrounding community and environment.

About Honeywell Fire and Gas Solutions

Honeywell provides automation, control and safety solutions to leading terminal operators worldwide. Our integrated fire and gas solution provides a rapid and coherent operational response to emergency situations, ensuring maximum uptime.

Honeywell has a long history of working with leading energy producers in the Europe, Middle East and Africa (EMEA) region. Its F&G solutions have satisfied customer expectations in terms of quality and international certifications, with competitive prices and deep technical expertise.

The general scope of work on the Sokhna terminal project has included (but may not be limited to) the following tasks:

- Fire and gas zoning
- 3D fire and gas detector mapping
- Performance target selection
- Datasheets and specifications for F&G devices such as gas detectors, fire detectors, LPG spill detectors, strobes, horns, manual call points among many other such devices
- Fire and gas layouts in 2D and 3D formats
- Areas of Concern Assessment to classify the facility into different fire and gas zones based on the hazards present in each process area
- Detector Technology Assessment to select the appropriate gas detectors for the identified hazards
- Fire and Gas Detector Coverage Assessment utilizing fire and gas mapping to determine optimum detector coverage (assessment is performed until the determined performance target is achieved for each configuration)

The Fire and Gas Detector Assessment and Specification (FGDAS) will serve as a design document for detailed engineering, and forms the basis for determining the optimum number, location and type of fixed gas detectors for process units. The study also helps deploy F&G solutions consistently across all facilities. The Fire and Gas Performance Target Selection for flame detectors was executed using a semi-quantitative method, whereas the detector technology assessment utilized a geographic coverage assessment method to produce an optimized layout of detectors for the site.

Results

On the Sokhna terminal project, Honeywell provided a comprehensive fire and gas solution offering:

- Single solution view
- Integrated, out-of-the box performance
- Lower cost to implement and manage
- Optimization of F&G detectors to help lower capital and operating expenses
- Effective F&G coverage and reduced false alarms
- Increased safety and reliability

Summary

Terminal operators must meet their safety needs while ensuring operational and business readiness at project start-up. Faced with this reality, they can benefit from the lowest risk, and highest value protection, from their safety system and fire & gas technology.

For More Information

To learn more about how Honeywell F&G solutions can improve performance, visit www.honeywellprocess.com or contact your Honeywell Account Manager.

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