

Integrated Fire & Gas upgrade Improves Safety at Power Plant

Case Study

The new integrated fire and gas system has not just enhanced the plant's safety, but also made a significant contribution to plant profitability.

EÜAŞ, Turkey

Background

The Ambarlı combined cycle gas power plant on the Marmara Coast of Istanbul is among the largest in Turkey. Commissioned in 1991, the nine units have a design capacity of 1351 MWe.

The plant is operated by Elektrik Üretim AS (EÜAŞ), the largest electric power company in Turkey, and the country's third biggest businesses by revenue.

Challenge

EÜAŞ required a complete Fire Detection and Alarm system upgrade. The existing fire detection systems suffered from obsolescence, as well as repeated false alarms. There were also a number of areas in the facility – both process and non-process – not covered by the old system. Effective mitigation depended heavily on manual responses, leaving significant scope for human error.

EÜAŞ awarded Honeywell the project to replace the fire detection and alarm system with a modern solution that would address these weaknesses. It also needed to comply with all Turkish safety regulations and relevant international codes and standards, specifically EN54 and NFPA.

As an operating power plant, all installation and implementation work would have to be completed with production online.

Solution

Leveraging a local presence through an affiliate, Honeywell was

able to deploy expert engineers and project management with a strong understanding of local standards. At the same time, the project followed its high quality global implementation model. Honeywell delivered a comprehensive solution using a wide range of its technologies:

- [Safety Manager](#), the safety solution that integrates process safety data, applications, system diagnostics and critical control strategies to detect and prevent dangerous conditions. Providing automatic, safe shutdown to protect the operation, the solution also offers root-cause analysis to drive improved system performance.
- [Universal Safety I/O](#) simplify installation and maintenance of safety devices. Each of their 32 channels can be configured individually to a different I/O type, and up to 28 redundant modules can be connected to a Safety Manager using the SIL 3-certified communication network.
- [The XLS80 Fire Alarm Control Panel](#) with advanced intelligent, flexible analogue addressable design and functionality along with user friendliness to ensure highest safety standards and reliability.
- [FAAST Fire Alarm Aspiration Sensing Technology](#) provides very early warning smoke detection in harsh and difficult environments while maintaining a high level of immunity to non-smoke particulate.
- [Sensors and devices](#) including smoke, heat, gas and flame detectors, as well as manual call points, horns and strobes, to minimize hazardous conditions and improve safety.
- [Experion® Industrial Security](#) server and workstations to provide a wide range of physical security options tightly integrated with the plant control systems.

Benefits

Operating with a strong local team, EÜAŞ and Honeywell worked together to select fire, gas and flame detectors, aspiration systems, safety systems, fire panels, and human interfaces. Together they tailored a solution that precisely fitted the plant's requirements.

The solution provides a modern, comprehensive fire and gas safety system with control and monitoring of the entire facility from the central control room. Additionally, local fire alarm panels and sounders warn of any detected abnormal situation.

With automated alarms and responses and tight integration of the safety, process and security systems, the site has significantly reduced response times and dependence on operator actions. The result is a much higher standard of safety that also meets all relevant national and international standards.

During the project, the Honeywell Universal Safety I/O dramatically reduced site work and cabling and simplified integration of fire & gas system controllers with the automation control system. Soft marshaling enabled the I/O modules to be mounted close to the process unit, eliminating the need for marshaling panels, homerun cables and field auxiliary rooms.

In the longer term, Universal I/O will bring EÜAŞ benefits in terms of lower maintenance costs and simpler additions in terms of future fire suppression systems. With configurable I/O channels it will be easy to implement logic and configure input/output signals to other systems such as trip signals to the automation system and initiate signals to suppression systems.

Finally, a fully integrated solution from a single supplier helped EÜAŞ reduce time taken on engineering, testing, commissioning and startup.

For More Information

To learn more about Honeywell Fire & Gas Solutions please visit [Integrated Fire & Gas Solutions](#) page or contact your Honeywell Account Manager, Distributor or System Integrator.

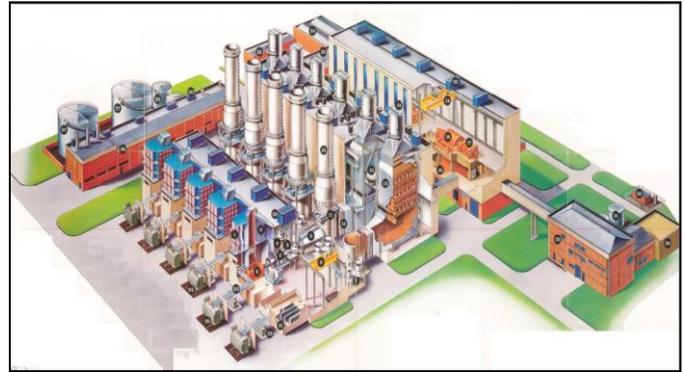
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The EÜAŞ Ambarlı Combined Cycle Power Station in Istanbul.

Results

Without interruption to operations, as a single supplier Honeywell implemented a fully integrated fire and gas solution within the tight project schedule of just 10 months.

Covering all process and non-process areas, the system provides continuous monitoring and automated systems for alarms and responses. Eliminating false alarms, it enables safe, smooth, continuous production. Euas Ambarli continues to rely on Honeywell for support in maintaining and improving the system.

The new integrated fire and gas system has not just enhanced the plant's safety; it has made a significant contribution to plant profitability. The project design, planning and implementation have been flawless

About Honeywell Fire and Gas Solutions

Honeywell's layered approach to safety encompasses a fire and gas solution that integrates seamlessly with Experion® PKS and Safety Manager. It helps users respond rapidly and coherently to safety issues, ensuring maximum plant uptime while protecting people, assets and the environment.

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