

## KJO Improves and Upgrades Process Automation with Honeywell Solutions



“When Honeywell talks about safety, reliability and efficiency, we know they mean every word of it. We have seen it in action the past 20 years.”

Mustafa Yusuf, Senior Project Engineer, Al-Khafji Joint Operations

### Benefits

Al-Khafji Joint Operations (KJO) has benefited from a successful relationship with Honeywell for over 20 years. Honeywell has been the key provider of automation solutions for KJO's various crude oil production, processing and loading facilities. The relationship continues to grow as the company upgrades its control system to the latest release of Honeywell's Experion® Process Knowledge System (PKS). For KJO's automation upgrade, Experion PKS was the obvious choice based on a solid history of delivering proven technology, integrated services and onsite support.

This long-term relationship with Honeywell has enabled KJO to realize the following benefits:

- Increased investment protection through process control continuity and reliability
- Improved safety and efficiency of process operations
- Minimal downtime during operations— the Honeywell control system has been in place for 10 years with almost no disruptions
- Improved availability with full redundancy of the controllers and communications
- Improved and maintained integrity of data downloaded in the field
- Availability of archived data for better understanding of the trends resulting in more detailed operations reports
- Ability to stage and factory test equipment with the same Honeywell team due to the stable and long-term relationship
- Increased operator skill levels through well researched and customized training



### Background

Al-Khafji Joint Operations was formed as a result of the joint petroleum production operations agreement between Aramco Gulf Operations and the Kuwait Gulf Oil Company. KJO owns and operates the crude oil production, processing and loading facilities at Al-Khafji located in the northeast of Saudi Arabia, processing around 300,000 barrels of crude oil per day. It is also involved in other businesses like offshore loading, power generation, water treatment and water desalination.

### Challenges

In 1998 when KJO looked for a solution to automatically monitor and control gas separation and optimize its processes, it selected Honeywell's TotalPlant® Solution (TPS) process control system. For 10 years, TPS has helped improve performance at the plant.

As KJO faces new process automation challenges which require a more versatile and easy to use system, it wanted to collect more knowledge from the plant and to improve safety, reliability and efficiency at its facilities. KJO also wanted the new system to leverage the capabilities of the existing system to protect its investment and preserve data collected over the years.

## Solution

Honeywell's Experion PKS met KJO's needs for a process control system upgrade. The relationship between the two companies was an important factor in selecting Honeywell. "Honeywell was our obvious choice, not only because we believe in the technical superiority and reliability of Honeywell products, but also because we've had a great working relationship with the Honeywell team over the past two decades," said Mustafa Yusuf, Senior Project Engineer at KJO. "The engineers have a good understanding of the culture, expectations and philosophy of KJO and their commitment to KJO has been well demonstrated over the long period that we have worked together."

The Honeywell support team based in the Middle East has been a key reason for the continued success and strong relationship between KJO and Honeywell, starting with the implementation of TPS for monitoring and control of KJO's (then Arabian Oil Company) gas separation and desalting plan in 1998. TPS was extended to KJO's 90MW power plant and water treatment plant which were established in 2002. KJO upgraded to Experion in 2005 when it decided to build a new water desalination control room, upgrade the existing two water desalination units and add a third desalination unit with built-in expansion capability for a fourth unit.

KJO is set to take advantage of the capabilities of Experion R300 (with C300 and Safety Manager) for the new crude storage tank and buffer tank units for the Ratawi Reclaiming System, which is part of the HOUT onshore production facility. Experion and Safety Manager provide an integrated safety and control solution with a solid process control foundation to support future storage requirements, reclaim the oil from production slops and maintain production rates for the next 30 years at this expanded facility.

### More Information

For more information, visit [www.honeywell.com/ps](http://www.honeywell.com/ps) or contact your Honeywell account manager.

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With Experion, KJO operators and engineers have greater access to plant information to make better, faster operating decisions. Experion offers the significant advantage of integrating with the older TPS system to help ensure a seamless transition to the newest technology. All TPS data, events and operator messages were easily imported into Experion.

Based on the tremendous success with Honeywell and Experion, KJO has selected Honeywell to provide automation solutions for its new project called FDP-1. In this project TPS and Experion systems from existing production, water desalination, water treatment and Ratawi control rooms will be integrated in a new central control room (CCR) utilizing the unified Honeywell FTE network and plant information network. The FDP-1 scope also includes the process control system for the new onshore and offshore oil and gas facilities which will be part of the CCR.

KJO will benefit from Experion R300's features to enhance safety, reliability and performance. Experion R300 offers a vertically designed Series C I/O, delivering a smaller footprint and reducing installation and maintenance costs, a new control firewall that protects the control level from unwanted Ethernet messages, and an automated Experion Backup and Restore feature that quickly restores data after a PC failure.

With more projects on the horizon, KJO has reiterated its commitment to continuing its successful working relationship with Honeywell. "Honeywell has more than met our expectations in the past and we did not feel the need to look to other vendors," said Yusuf. "The local Honeywell staff in the Middle East has always been a highly valued extension of our automation team. We look forward to working together and achieving further success."

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