

REVAMP, REUSE, RECYCLE: AN EFFICIENT REFINERY DCS UPGRADE

Application Note

Honeywell helped a Middle Eastern refinery gain the benefits of a state-of-the-art, integrated control system while minimizing costs associated with ripping and replacing existing equipment.

BACKGROUND

A Middle Eastern refinery with a capacity of 5 MTPA approached Honeywell with an issue of obsolescence.

Processing a wide range of crude oils and various other crude blends, the refinery was designed for deep conversion of low value heavy products, such as gasoil, into high quality middle and light distillates. The process units, utilities, crude facilities and product dispatching were all controlled by an aging distributed control system in the main control centers, with local equipment rooms (remote satellite rooms) connected through fiber optic cables.

CHALLENGE

As part of its modernization program, the plant owner and operator decided to replace the entire plant-wide DCS as well as address weaknesses in interfaces with third party systems.

Several control packages controlled by different PLCs and connected to the main DCS had to be included, as did an obsolete temperature multiplexer system and an old emergency shutdown system.

The project aimed to rehabilitate the existing plant-wide DCS and upgrade the ESD system, temperature multiplexing and converters for the load controllers.

Field devices, subsystems and package devices were all to be fully integrated with the new system.

SOLUTION

Honeywell's scope of work included the entire rehabilitation of the installed DCS, along with its associated components. It supplied all necessary hardware, software, engineering and configuration for the new [Experion® PKS](#) solution.

It also provided project management, staging and checkout of the new DCS,

Honeywell has a long track record of executing successful migrations. We have delivered the process industry automation solutions for over 40 years and technology licensing for over 100 years. Our engineers draw on extensive knowledge of competitive systems and key tools for audits and migration.

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THIRD PARTY SYSTEM MIGRATION

Honeywell provides third party system migration ranging from full migration of existing systems to varying options for incremental migration that enable customers to upgrade without any loss of production and efficiency.

commissioning of the new system and confirmation of integration with the refinery control subsystems. Supply and installation of the PCs providing a view-only connection to the process were even included.

To retain existing third-party equipment, Honeywell supplied and installed all required interfaces. The existing marshaling cabinets were retained, as were fiber optic cables to connect the control room, where possible. Prefabricated cables were used to connect termination assembly cards at the front of the marshaling cabinets to new system I/O cards.

Finally, Honeywell supplied and installed an asset management system, and ensured integration of the Experion PKS system to the site's enterprise resource planning solution.

BENEFITS

Honeywell's highly integrated solution fully met the plant's needs. Not only did it integrate the field and other third party systems, but it also seamlessly encompassed another part of the plant with a modern third party DCS system (still under warranty), which was replaced.

The Experion system addressed the lack of cyber security in the legacy system and ensured the reliability of the plant – which is among the country's main refineries.

The Experion system will now serve as a foundation with which to integrate further applications such as advanced alarming and further plant expansion.

For More Information

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