

Indian Oil's Gujarat Refinery Automates Plant with Honeywell SCADA Solution



“We relied on Honeywell to help ensure the success of automating our plant with a single, centralized SCADA system for control and monitoring of our major electrical substation.”

Automation Lead, Gujarat Refinery, Indian Oil

Benefits

Indian Oil Corporation Ltd.'s Gujarat Refinery in western India is the company's largest and most efficient refinery. In order to maintain this distinction, Indian Oil wanted to automate and centralize operations of the refinery substation to improve efficiency and reduce both costs and unplanned outages.

The refinery employs a SCADA system to establish computer-based control and communication systems, which are necessary to improve power system operations, resulting in more effective monitoring and control of the power system networks of its electrical grid. At the heart of system is Honeywell's Experion® Process Knowledge System (PKS) with a built-in SCADA solution. Benefits experienced at the refinery with the Honeywell solution include:

- Improved power system operations
- More effective and centralized monitoring and control of the power system network
- Improved supply, installation and commissioning of hardware, software, documentation, training and support services
- Fully integrated automation solution with new open-connectivity interfaces
- Established computer-based control and communications system

Background

The Gujarat Refinery at Koyali in Gujarat, western India is Indian Oil's largest refinery. The refinery was commissioned in 1965 and its facilities include five atmospheric crude distillation units. Through its product pipelines the refinery primarily serves the demand for petroleum products in western and northern India.

The present installed capacity of the refinery, which processes both indigenous and imported crude oil, is 13.7 MM tpa. The refinery has also achieved its highest ever crude throughput of 12.7 million tons.

Challenge

As Indian Oil's largest refinery and the largest public sector refinery in the country, the Gujarat plant has a crude throughput of 12.7 million tons. The energy consumption at the refinery is monitored on a daily basis and optimization of consumption is an ongoing process. In order to maintain its distinction of not only being the largest, but also the most power efficient refinery, Indian Oil looked to automate the Gujarat plant with a single, centralized SCADA system.

“We had several key drivers for the automation of the substation at the Gujarat Refinery and wanted to meet those with the best solution possible,” said the Automation Lead, Gujarat Refinery, Indian Oil.

Key challenges that the company wanted to meet with a new automated SCADA system included the following:

- Improve operational efficiency
- Reduce operations and maintenance costs
- Reduce outages with auto-sectionalizing
- Improve coordination with plant substation
- Reduce outage minutes with restoration of major load
- Improve load balancing

Solution

A centralized SCADA solution was the most obvious choice for the Gujarat Refinery to improve operations and become more efficient. The Gujarat Refinery selected Honeywell's Experion PKS with built-in SCADA support for its advanced automation platform with innovative software applications to establish a computer-based control and communications system.

Honeywell's Experion system with built-in SCADA features provides the infrastructure behind a range of tools that improve efficiency and productivity. Features include:

- Unmatched scalability with patented Distributed System Architecture (DSA) technology seamlessly linking multiple systems together between units or plants at the same site or across locations
- Integrated process control, SCADA and safety systems into a single, unified architecture, eliminating the cost of operating and maintaining multiple systems

- Integrated tools to diagnose, manage and monitor all system components including the health of various hardware components
- Integrated server redundancy without the need for expensive third-party, fault-tolerant computing platforms
- On-board historian for collection of history and events
- Wide range of dedicated interfaces for PLCs, single loop controllers, OPC and DNP3 to meet the most demanding connectivity needs

In addition to the Experion PKS SCADA solution, Honeywell supplied all the computer hardware, RTUs, energy meters and services required. Services included database and display development, RTU engineering, customer training, system integration and FAT, installation and commissioning, integration of existing RTUs, site acceptance testing and warranty.

"With Honeywell's solution we were able to automate our plant with a centralized system that provided the necessary control, monitoring and interconnectivity to improve our efficiency and ultimately our entire business," concluded the Automation Lead.

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More Information

For more information on Honeywell's Experion PKS and SCADA solutions, visit www.honeywell.com/ps or contact your Honeywell account manager.

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