

KRIBHCO Ammonia Extension Plant Migrates to Honeywell Experion[®] PKS and Improves Performance



“Honeywell’s commitment and high-level coordination with the in-house Engineering & Commissioning crew ensured that the system was supplied in 24 weeks and Erection & Commissioning was completed within a 25 days shutdown period without any major problem.”

B.R. Patel, Dy.General Manager, KRIBHCO, Hazira

Benefits

India-based urea, ammonia and fertilizer manufacturer Krishak Bharati was revamping its ammonia extension plant in Hazira, Surat, to increase availability of the control system during production. The facility was challenged by very old technology that was holding back its performance. The plant was running a 25-year old Siemens system and decided a key step in the ammonia expansion project was to replace the old technology with new controllers and an advanced process knowledge solution.

Based on good experiences with Honeywell solutions at their other units, the company decided to implement the Honeywell Experion[®] Process Knowledge System (PKS) with a C300 Process Controller using Process Manager Input / Output (I/O) module solutions and Safety Manager at the Hazira facility. Lack of reliability with the existing system caused frequent plant stoppages and affected productivity.

A key goal that was met was the fast, efficient implementation of the Experion PKS solution with a minimal shutdown period of 25 days. Additional benefits include:

- Improved plant performance and production capacity
- More stable plant operations and reduction in plant idle time due to elimination of unwanted trips
- Reduction in spare part inventory requirement
- Lower maintenance costs
- Improved energy efficiency
- Eliminated ghost tripping



Honeywell Experion PKS replaced 25-year-old technology at KRIBHCO Ammonia Extension Plant in Hazira in a record time of 25 days.

Background

Headquartered in Noida, India, Krishak Bharati Cooperative Limited (KRIBHCO) is an Indian cooperative society that manufactures urea, ammonia bio-fertilizers and other chemicals. It has a manufacturing complex in Hazira near Surat with three boilers, two steam generators, two Ammonia plants, four Urea plants and an ammonia extension project.

Challenge

The KRIBHCO ammonia extension plant was running a 25-year-old Siemens system with hardwired logics. The technology was outdated and the system was missing key functionality. There were also no soft records for events such as alarm management or storage facility history.

“Our control system was very outdated, and finding expertise to troubleshoot issues was very difficult,” said B.R. Patel, general manager at the Hazira plant. “Spares were very costly, so we were spending more money on maintaining an inventory. The technology was old, and when we made attempts to update the system, it was very difficult to implement modifications.”

Solution

KRIBHCO chose to team up with Honeywell Automation India for the challenging project of the complete replacement of the existing Siemens Teleperm legacy system and hardwired cause and effect circuit. The choice was to install Honeywell Experion EPKS with C300 Controllers and SIL3 TUV certified Safety Manager as an ESD system. The entire system of approximately 5,000 I/Os was ripped out and replaced with 3500 I/Os of the DCS and a 1500 I/O safety system in a record time of 25 days using a “First Time Right Approach” in all aspects. The seamless integration of the Experion DCS with the ESD helped to significantly reduce I/O requirement. Although the implementation was originally planned for 30 days, it was later reduced to 25 days by the client. On the evening of the 25th day the new DCS and ESD were commissioned and gas was successfully charged in the plant.

The Honeywell team worked closely with the plant staff to manage all aspects of the implementation, including:

- On-site study
- Documentation

More Information

For more information about Experion PKS, please visit our [website](#) or contact your Honeywell account manager.

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- Micro-level planning
- Detail engineering
- Installation and commissioning

Honeywell's commitment and high-level coordination with the plant commissioning crew ensured that the job was completed within a record time without any undesired upsets to normal operations. With this migration, the unit was able to improve its energy efficiency as software and logic replaced most of the hardwired systems. The C300 Process Controllers at the ammonia plant use the Control Execution Environment (CEE) software that provides an execution and scheduling environment where control strategies are configured from a rich set of function blocks. The CEE provides the facility with a seamless communication infrastructure through which control strategies can exchange data through parameter connections.

The Experion Process Manager I/O modules installed provide the physical connection between the automation system and the process. All components can be implemented redundantly for a solution with no single point of failure, reinforcing the plant's goal of reducing unwanted trips due to automation.

Since implementing the Honeywell solution, the KRIBHCO ammonia extension plant has improved production capacity and efficiency while reducing maintenance costs. The company has reduced plant idle time due to unwanted trips and overall plant performance has improved.

“The Honeywell team has delivered a safe and secure solution, and the reliability of the system has truly given us peace of mind,” commented Patel. “It should also be noted that the entire project was completed in eight months from the date of the order. The level of commitment from the Honeywell team is unparalleled.”

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