

Case Study

DuPont Migrates to Honeywell Experion System and Improves Reliability and Availability at Memphis Plant



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Bob Hachtel, DuPont Project Lead, DuPont

Background

Founded in 1802, DuPont puts science to work by creating sustainable solutions essential to a better, safer, healthier life for people everywhere. Operating in more than 70 countries, DuPont offers a wide range of innovative products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel.

DuPont is committed to continuously improving practices, processes and products to reduce their risk and impact throughout the product life cycle. The company is also focused on new products and processes that have increasing margins of safety for both human health and the environment as it drives towards its zero emissions standards.



DuPont improves reliability and availability at Memphis plant with Honeywell Experion.

Benefits

Located in Shelby County, just north of downtown Memphis, Tennessee, DuPont has a chemical plant that contains the world's largest solid cyanides process. The company wanted to update its facility and replace its legacy Fisher Provox control system with a next-generation Distributed Control System (DCS).

The project's overall aim was to ensure high reliability and availability of the DuPont process unit's DCS. With a 20-year system in place, DuPont faced limitation on the equipment and support available, with additional concerns about unplanned shutdowns or production losses that could result from the outdated system. DuPont teamed up with Honeywell's Global Engineering Services on the migration project and selected Honeywell Experion Process Knowledge System (PKS) with C300 controllers and Safety Manager.

Honeywell and DuPont teamed up to mitigate some of the risks during migration and achieved the following benefits:

- Minimized downtime for cutover and commissioning of the new DCS
- Increased reliability and improved availability
- Onsite team member support for configuration activities and bi-weekly project team meetings kept project on track
- Various equipment was ordered, installed and commissioned six months before the planned turnaround to enable operator and mechanic training
- Operators fully trained and comfortable with ICON quad workstations prior to commissioning
- Improved efficiency and confidence of team with onsite support

Challenge

As systems continue to age, the costs associated with maintenance and reliability tend to increase. With a 20-year old control system in place, DuPont knew it was time to update its technology and migrate to the latest and most efficient systems available to enable its Memphis, Tennessee plant to operate at optimum efficiency and meet all environmental commitments.

“Our old Fisher Provox DCS and TI 530 PLC’s used for process and safety interlocking had run their course and the risks, lack of spare parts and knowledgeable resources, led us to take action and migrate our DCS system,” said Bob Hachtel, DuPont Project Lead.

Solution

DuPont chose to install a Honeywell Experion system to help increase productivity, lower costs, and improve both reliability and availability. DuPont and Honeywell Global Engineering Services teamed up on the migration project to make it as seamless and least invasive as possible.

Experion provides a path to the newest DCS technology available and is the only process automation system purposely-designed to manage business, processes and assets in one unique system.

During project front end loading, it was determined that DuPont would need assistance in replicating its DCS and PLC configuration in the new Honeywell Experion system. With proven system assessments and migration experience, the Honeywell Global Engineering Services team provided support for an easy transition.

System I/O count was approximately 1300 for various point types, including simple to complex regulatory control loops and various machinery control logic and permissives. Operators controlled the process through highly detailed graphic displays on the old Provox consoles. To minimize downtime for cutover and commissioning, the new DCS controllers, marshaling cabinets, servers, workstations and fault tolerant ethernet were installed and commissioned six months before the planned turnaround.

“Timing was key and being well prepared in advance allowed for operator and mechanic training and early cutovers to help quicken the learning curve and have them operate the process with the new ICON quad workstations,” continued Hachtel.

Honeywell’s migration solution for Provox systems is designed to take advantage of a customer’s investment in the existing system while enabling additional benefits for a robust solution to meet efficiency, reliability and safety needs.

The following key factors contributed to the success of this project:

- Collective experience of team members for all aspects of hardware and software
- Side-by-side comparisons of old and new DCS systems for verification and testing of new software
- Onsite Honeywell engineer support for configuration activities
- Bi-weekly project team meetings with focus on action items and schedule
- Close attention to details
- Use of bulk builds and standard solution pack dynamic shapes
- Thorough and comprehensive software acceptance testing
- Complete I/O check of every wire and installation prior to cutovers
- Early on-line cutovers
- Heavy involvement with area mechanics and operators during checkout and commissioning
- Coordinating equipment repairs for planned maintenance during turnaround, locking and unlocking for timely cutover and checkout activities
- Extensive use of flip charts to document progress through turnaround cutover and commissioning

DuPont was able to experience both operational and business benefits by migrating to Experion. Said Hachtel, "There are several factors that I believe were major contributors to the success of this project. From the beginning steps of project execution, there was excellent teamwork between DuPont and Honeywell. Honeywell shared our vision of successfully completing the project within schedule and on budget, with no production loss and zero incidents. Having a Honeywell engineer on location at the site significantly improved the efficiency of the team, coupled with each team member's personal commitment to the project."

For More Information

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