Optimizing Operations and Reducing Costs Using Modular Procedural Automation

About Safripol

Located in South Africa, Safripol is a leading plastics manufacturer that utilizes Basell’s Spheripol technology to produce 110,000 mt/year of polypropylene (PP) and 160,000 mt/year of high density polyethylene (HDPE). The polypropylene plant has been using Yokogawa control systems for over fifteen years, has kept up with current technology advances and is currently running Centum VP.

The Challenge

To remain globally competitive, Safripol is striving to improve efficiency of plant operations. The company is also using the Plan Do Check Act (PDCA) methodology to improve the quality of its products and introduce sustainable manufacturing practices.

To accomplish these objectives, the manufacturing division at Safripol identified the following challenges that had to be addressed:

- Maintain consistency in manufacturing operations and product quality
- Reduce the amount of transition material
- Retain vital operator knowledge that can be used in training new employees
- Track and report on every step in a batch operation
- Reduce the number of procedures through optimization and standardization
- Reduce costs

“It’s an electronic tool that combines the knowledge of a process engineer and a highly experienced operator in an interactive, electronic procedure that communicates with the DCS and does exactly what the procedure requires, every time and without any deviations. “

- Engineering Manager, Safripol
The Solution

Safripol addressed the identified challenges by employing a Modular Procedural Automation (MPA) methodology and Yokogawa technology. The technologies utilized in the Safripol MPA solution included: EXAPILOT – a knowledge management and operator assistant application, a new alarm management system through EXAPLOG and a dedicated compressor control system using STARDOM. The subsystems were integrated using Modbus protocol enabled data from multiple analyzers to be read by CENTUM and supported communications with other systems.

Through an MPA solution, Safripol was able to eliminate product variation and maintain consistency in its operations by reducing off spec products during transitions. The net result was an increase in process efficiency and reduction in operating costs.

- Engineering Manager, Safripol
The Business Impact

Some of the benefits realized from the MPA solution include:

- Ensured the consistency of process procedures performed by operators
- Reduced the amount of off grade material produced during transition operations.
- Enabled continuous improvement by providing the capability to test run new procedures/sequences
- Captured/retained valuable experience operator knowledge
- Enabled stringent operation of complex procedures by monitoring process conditions at every procedural step

Safripol has also improved training effectiveness by using the system to teach new employees how to carry out grade changes. Operators and engineers can practice the procedure without affecting the plant. Procedures can be simulated, analyzed and corrected before being brought online. The MPA solution also has a function that keeps a step-by-step record of every action taken, allowing the entire procedure to be monitored and tracked.
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