



ABB supplies “benefits-led” automation package for DuPont Polyester plant

The changeover from the existing control system took place while the plant was on-line.

Client: DuPont Polyester Plant
Location: Wilton, United Kingdom
Scope of Work: Fast track automation solution including Advant Open Control System with MOD 300 Software, Advanced Process Control package



A major automation upgrade, has produced significant savings on materials and energy used in the production of pure terephthalic acid, while at the same time maximizing plant throughput. This was completed by ABB at DuPont Polyester's plant at Wilton (formerly owned by ICI).

The project followed in-depth feasibility, benefits and costs studies carried out by ABB to ascertain how the application of advanced technologies could bring 'bottom-line' benefits to the plant's business.

Putting the theory into practice called for a fast track automation solution which included the application of an ABB Advant Open Control System (OCS) with ABB MOD 300 software, an Advanced Process Control package incorporating model-based predictive controls to enhance process control of the plant, and condition monitoring for greater efficiency in maintaining machine performance.

Full advantage was taken of ABB Advant open technology – integrating the condition monitoring into the control system under UNIX, exploiting the 'open' characteristics of TCP/IP networking and X-Windows access and linking into corporate information systems.

Supporting the Advanced Process Controls, an integrated process analyzer system to provide continuous on-line analyses of various sample constituents was supplied by ABB. The instruments are installed in a self-contained shelter complete with all the necessary gas detection, shutdown and electrical distribution facilities and utilities.

Terephthalic acid – used in the manufacture of such products as photographic film, clear plastic bottles and fabrics – is produced as crude terephthalic acid which is then purified. ABB controls are applied to both of these integrated processes.

The ABB Advant OCS includes Advant operator, engineering and IMS stations and ABB MOD 300 SC controllers with TRIO remote I/O. The SC controllers communicate over the distributed control network (DCN) to the Advant stations, and then via a gateway to the corporate management information system.

Condition monitoring, using Integri's 'Mentor 1' software, was also supplied. This provides engineering staff with an

advanced on-line analysis tool to detect and predict machinery problems and provides the operator with a single window on both the process and the condition of plant machinery. Should, for example, changes to the process show adverse effects on the machines, corrective action could be taken at an early stage.

Model-based predictive controls, which also form part of the APC package, are based on the Connoisseur MBPC tool kit from Predictive Controls Limited and help to cope more efficiently with the various process cycles and interactions. The changeover from the existing control system took place while the plant was on-line. This project followed on from a similar benefits-led automation solution implemented by ABB for the Aromatics 2 plant at ICI's North Tees Works.

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