



eLab - Process Technology

Streamlined performance and validation with digital automation

Biovet is one of Bulgaria's largest pharmaceutical companies and a specialist manufacturer of antibiotic feed additives and pharmaceuticals for farm animals and pets.

The company has just completed a project install PlantWeb digital architecture at a second fermentation area in its Peshtera plant.

Ivan Batakiev, Biovet executive director explained: "Our objective is to develop high added value products in the future, based on active pharmaceutical products. We are planning to build synthesis departments and will utilise Emerson automation systems because they give us a competitive advantage."

For this Biovet installation, PlantWeb with its DeltaV digital automation system has significantly increased stability and reliability, giving an improvement in operational performance of the fermentation process by 30percent. Centralised control has resulted in a saving of 10percent in human resource costs.

The installation at production unit three uses seven DeltaV workstations communicating with 450 field instruments via the FOUNDATION fieldbus communications protocol. AMS Suite: Intelligent Device Manager software embedded in the DeltaV system is used to access the predictive intelligence of the field devices to enable configuration, calibration, and diagnostic tests to be performed.

The rich, predictive diagnostics in the field instruments and valves contribute to operational improvement with easier configuration, extended calibration intervals and a reduction in required maintenance. In addition, this management of process and instrument health enables better ongoing control that has resulted in improved product quality and consistency.

The field instruments include Emerson control valves from the Baumann and Fisher range, fitted with Fisher FIELDVUE digital valve controllers (Fig.1), Rosemount flow, pressure and temperature transmitters, Micro Motion Coriolis flowmeters, and pH and dissolved oxygen analysers from Rosemount Analytical.

Biovet's aim is to manufacture high quality products with low manufacturing costs. The automated control of the plant provided by the DeltaV system makes a significant contribution to these requirements. This is particularly important for the critical fermentation processes.

Fermentation processes are batch based by their nature, and one of the major challenges in the pharmaceutical industry is to have absolute repeatability of each individual process. Biovet used the capacity in the DeltaV system to develop and implement batches.

According to Emerson, the stability and reliability of the new system is outstanding, and Biovet has not experienced a single emergency operation or situation that has damaged production or equipment.

Even when the plant experienced a mains power failure, the production unit's own power supply took over immediately, ensuring the process was safely completed.

Before the system was installed, operators had to walk around the plant to view instrumentation and make adjustments to the process. With the facilities spread over three floors, operators were required to walk up to seven kilometres on each shift. Improving upon this, the new system provides excellent visualisation graphics that allow the operator to see at a glance what is happening over the complete system.

Although the Biovet unit automation was a large project, the DeltaV system's engineering software, based on open, interoperable standards, made configuration quick and simple.

"With expertise, help and support provided by the local engineering team of Emerson we were able to develop a programme for the complete process," said Biovet's production manager Ivan Bonev. "We worked together to solve problems and develop new ideas and Emerson responded to even the smallest problems. The strength of the partnership that has developed between our companies has been a significant factor in the success of this project."

Major Norwegian expansion

Emerson Process Management has also been chosen by GE Healthcare as a working partner in a major new project to increase the production capacity at its Lindesnes plant in Norway.

The plant is situated in the municipality of Lindesnes, 70km south of Kristiansand. It has around 400 employees and produces the active ingredients used in contrast agents (Fig.2). This project includes new installations and alterations to the existing production plant, designed to meet the increased market demand for its x-ray and MRI contrast agents.

Among the demands Emerson has to meet on this £2million project are faster time to market, easier validation, and operations excellence based on real-time diagnostics in smart field devices.

As a result, the company is installing its PlantWeb digital plant architecture with the DeltaV digital automation system and FOUNDATION fieldbus digital communications technology.

"We have chosen to continue with fieldbus technology based on our positive experiences following its implementation in one of our new factories," said Roy Trane, the GE Healthcare engineer responsible for the project at the Lindesnes plant. "The bus technology provides a cost effective solution with faster and more efficient start-up. We can also see significant longer-term benefits from the diagnostics available from the intelligent field devices."



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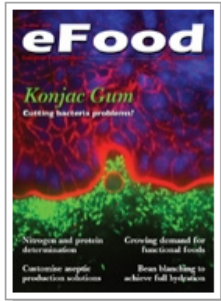
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Emerson's scope of supply includes project management, configuration and start-up. The PlantWeb digital approach will include similar equipment to supplied to Biovet in Bulgaria. However, also included in this package are tailor-made solutions for removing 5000I/O from the existing PLC systems and integrating these into the new scheme. The complete system will be a combination of the new and existing systems and will have a capacity of around 7500I/O. The planned completion date is February 2007.

Roy Trane concluded: "Emerson has previously demonstrated the necessary know-how, will and understanding to supply a well-documented and validated project, tailor-made for the pharmaceutical industry. This was an important factor for us in our choice of system supplier for the extension of the existing factory from the two bidders."



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