



■ Siegfried Ltd., Switzerland

Compliant and Flexible

By modernizing its hydrogenation unit, the Swiss company Siegfried achieved 60 percent higher productivity while improving both reproducibility and compliance with Good Manufacturing Practice (GMP) requirements.

Siegfried Ltd. develops and produces pharmaceutical intermediate products and active pharmaceutical ingredients. Since 1996 the company has been operating a Biazzi high-pressure hydrogenation unit in which the intermediate products are produced with the aid of precious metal cat-

alysts. Although designed by the manufacturer for an operating pressure of 40 bar, the unit was operated at only 10 bar because the process control system had to be adapted to a predefined product. The process was developed further, but the parameterization and adaptation of additional components with the old process control system proved difficult and not very user-friendly. Paul Schwarz, project manager at Siegfried, reports, “Every change would have entailed an expensive control system validation.” In order to ensure operational reliability and meet market requirements, the owner decided to expand and convert the unit. Roland Schürmann, production manager at Siegfried, explains the requirements: “We wanted to operate the plant with a pressure of 40 bar and convert it to a multipurpose setup to be able to manufacture various products. Operation was also to be as clear and simple as possible.” The project was entrusted to CTE ControlTech Engineering in Liestal, which had the necessary expertise in pharmaceutical production automation, according to Schürmann.

“Conventional control” wanted

A new process control system had to be evaluated. Schürmann explains, “Technical solutions that are adapted exactly to our plant are available on the market, but we wanted a conventional solution.” CTE’s

Solution Partner

Automation

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CTE ControlTech Engineering AG

CTE ControlTech Engineering AG has specialized as a solution and service provider for the automation of chemical and biotechnical processes and in the field of industrial IT and informatics. As a general planner, the company handles projects of varying size and complexity. The range of services includes the entire area of planning and detail engineering; implementation and installation; and optimization, plant support, and maintenance.

Employees: 41

Founded: 1990

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Sven Brändlin, project manager at CTE; Peter Henzmann from Process Control Technology Sales at Siemens; and Paul Schwarz, project manager at Siegfried (from left to right) discuss the selected solution



Inspection of the plant by Josef Fellmann, plant foreman; Jacques Arpagaus, shift foreman; and Roland Schürmann, production manager at Siegfried (from left to right)



The AS 400 server system of the Simatic PCS 7 process control system collects, processes, and archives the process data

All photos: Siemens AG

» Productivity was increased by 60 percent, with an improvement in quality. «

Roland Schürmann, Production Manager at Siegfried

suggestion to use the Simatic PCS 7 process control system with a CTE recipe system was convincing because, says Schwarz, “many of our plants are already equipped with Siemens products and our staff therefore already has the necessary technical knowledge.” The specification was compiled jointly by production management, foremen, project managers, and integrators. Schwarz comments, “The discussions constantly brought new knowledge and demands to light, which continuously flowed into the project.” The production process, consisting of hydrogenation preparation, hydrogenation, and filtration, was reorganized into three independent, networked plant sections. The entire plant is controlled, however, by one process control system, which saves the data on the servers via the distributed Simatic ET 200 I/O systems. Sven Brändlin, project manager at CTE, says: “We fitted all the pneumatic valves with Profibus connections. The heating/cooling system was also converted. The intelligent regulation of the heating phase enables fast regulation of the nominal values and significant energy savings.”

A striking success

The result was better than anyone expected. “Productivity was increased by 60 percent, with an improvement in quality,” says Schürmann, and points out another highlight: “Minimum quality fluctuations in such processes cause unwanted delays, which we previously had to accept. Today, we track the process in detail and can detect problems at an early stage. Thanks to the exact reproducibility on the technical side, sources of error can be pinpointed precisely – an immense advantage.” The recipe system from CTE allows the manufacture of various products thanks to a choice of parameters. The parameters can be adapted easily by the personnel. Access is clearly regulated by several hierarchical security levels. Brändlin explains: “All the possibilities that the system has to offer are combined in modules and tested so that an adaptation by the operating personnel has no influence on the regulatory requirements.”

The system offers another big advantage, Schwarz acknowledges: “The controller records every intervention and documents it according to Part 11 of the US Food and Drug Administration (FDA) regulations. Our plant meets these requirements and still ensures a high level of flexibility in production. We often did not dare change a process in the past, but it can now be done in no time without any problems.” ■

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