



A Yokogawa Commitment to Industry

vigilance[™]

SUCCESS STORY

Old DCS Replaced with a Yokogawa CENTUM CS 3000 in a Surprisingly Short Time / Foskor Richards Bay, South Africa

Location: South Africa
Order Date: October 2001
Completion: February 2002
Industry: Chemical



Introduction

Foskor Richards Bay is a major chemical company in South Africa that supplies 14% of all the phosphoric acid that is traded internationally. The company currently produces 720,000 tons per annum of phosphoric acid at two phosphoric acid plants, and also operates three sulfuric acid plants and a granular fertilizer plant.

Responding to a Challenge

In 2001, Foskor Richards Bay launched the Sulphos project to expand phosphoric acid production capacity from 550,000 to 770,000 tons per annum. As part of this project, Yokogawa contracted with the main project vendor to provide its CENTUM CS 3000 system for a phosphoric acid plant and a sulfuric acid plant that were under construction. In addition, Yokogawa was asked to replace a DCS from another vendor that was in use at the company's existing phosphoric acid plant.

Although the Sulphos project seemed to be on track, the control system at the existing phosphoric acid plant unexpectedly failed on December 19, 2001, when its hard disk drive crashed. As a result, the entire production operation had to be shut down and the project database was lost.

The customer was forced to make a quick decision between re-engineering the old system or installing the CENTUM CS 3000 three months ahead of schedule. The decision was made to go with the CENTUM CS 3000. Work on this got started on December 20 and the plant went live on December 28. The successful installation of this system in such a short period of time can be attributed to the following:

- Panel manufacturing and DCS engineering were done ahead of schedule.
- A dedicated team consisting of personnel from Foskor, Yokogawa, and Industrial Automation & Control (a local site engineering company) was assigned to the task.
- Work was done in 15 hours shifts for eight straight days, including Christmas.

Remarkable and Unique Solutions that Produce Results

Project Sulphos was successfully completed and the Yokogawa CENTUM CS 3000 is now running both the old and new phosphoric acid plants as well as the new sulfuric acid plant. And Yokogawa's contribution is not limited to replacement of the DCS; Foskor Richards Bay has also implemented the following unique solutions in its new production systems:

- Radio telemetry link between an effluent pumping station and the CENTUM CS 3000
- Remote login function that enables the customer's engineers to access CENTUM CS 3000 engineering stations remotely
- Maximum demand load controller that protects a steam turbine co-generator
- Modbus interface link to remote telemetry and to feeder protection relays
- Wonderware INSQ8.0 long-term data historian that performs data collection via the Yokogawa Exaopc interface and provides trend data and reports via the company network and email.

Foskor Richards Bay expects in the near future to complete installation of the CENTUM CS 3000 at its old sulfuric acid plants and at the granular fertilizer plant. It also plans to work closely with Yokogawa and Industrial Automation & Control to link its production operations with a manufacturing execution system.

Through the course of this very successful project, Foskor Richards Bay and Yokogawa have built a strong relationship, and this has been a positive factor in motivating and obtaining a greater contribution from the personnel involved. Yokogawa is proud to have had the opportunity to take part in this prestigious project.

System: CENTUM CS 3000
System Configurations: 4 x HIS stations, 1 x FCU, 8 x nodes with 1650 I/O