

Deten Chemicals, S.A.
Camacari, Bahia, Brazil

Brazilian Petrochemical Plant Among the First to Install Fieldbus

Deten Chemicals S.A. produces Linear Alkyl Benzene (LAB), a basic raw material used in detergents, at its plant in Camacari, Bahia, Brazil. Like other chemical manufacturers, Deten requires plant control systems that provide reliability, flexibility, and short/longterm economic benefits. In order to meet these objectives, Deten became one of the world's first chemical producers to install a FOUNDATION fieldbus-based control system on a commercial application. An initial fieldbus project was undertaken by the company in December 1994. Based on the success of this application, Deten undertook a larger project in 1996 encompassing a wide range of fieldbus instruments, including pressure transmitters, temperature transmitters, flow meters, level gauges, positioners, fieldbus-to-current (4-20 mA) and current-to-fieldbus converters, and fieldbus Programmable Logic Controllers (PLCs).

Both redundant communications and redundant bus power systems are used for critical controls. This includes fieldbus communications between PLCs and a Motor Control Center (MCC) which has its own PLC.

Triple redundant instrumentation is installed on critical control loops, with redundant fieldbus instruments used on all other control loops. Each loop has two temperature transmitters and one fieldbus-to-current (4-20 mA) converter. Should the principle temperature transmitter stop working, the secondary temperature transmitter will send its data to the PID control block. If one of the fieldbus interface boards develops a problem, the data will be handled by another. In the event both transmitters and both interface boards stop working, a safety value is sent by the software block to the PID control block.

The integration of Internet technology into the fieldbus control system improves

the ability to oversee process operations. With this capability, plant personnel can verify process variables, perform on-line maintenance and monitor supervisory screens.

The first phase of the FOUNDATION fieldbus installation, including instrument configuration, installation and operation verification, was carried out in just 23 days. Furthermore, plant personnel were able to integrate four Man/Machine Interfaces (MMIs) and supervisory software during this period of time.

Reductions in design, installation and start-up costs made possible by FOUNDATION fieldbus have produced significant economic benefits for Deten. To date, the company has calculated a total project savings of 32 to 45 percent. This includes savings in cable costs of approximately 97 percent. Other installation savings were achieved through reductions in cable tray and panel costs.