

Yokogawa instrumentation and DCS for CSBP expansion

An expansion of production facilities at CSBP's ammonium nitrate plant at Kwinana will see total output more than double. Production processes at the new plant will be monitored and controlled by field instruments, a safety system and a distributed control system (DCS) supplied by Yokogawa Australia. All software configuration for the distributed control systems and Safety PLCs is being done by Yokogawa.

Built in the mid-1960s, with a nitric acid plant and ammonium nitrate plant added in 1996, CSBP's Kwinana facility currently manufactures around 235,000 tonnes per annum (tpa) of ammonium nitrate as prill for the explosives market or in solution form for both the fertiliser and explosives markets.

The expansion project will see the construction of a second nitric acid plant, a second ammonium nitrate plant and the construction of a new prilling plant, all of which will combine to lift total production to some 470,000 tpa.

To be built within CSBP's 140 hectare Kwinana works site, the new manufacturing facilities will include a significant range of process control and management features, including an extensive range of field instruments (including flowmeters, pressure and DP transmitters, temperature transmitters and liquid analysers for pH and conductivity), a ProSafe Safety Implemented System and a CENTUM CS3000 R3 Distributed Control System – all supplied by Yokogawa and essentially duplicating the contract for services and equipment to the original plant.

“This latest contract continues the exceptionally strong working relationship between CSBP and Yokogawa,” said CSBP's Vinod Verma, Senior Electrical and Instrumentation Engineer at Kwinana. “Their products have proven themselves at this facility over the last decade and, since the first contract in 1995, Yokogawa has been very responsive to our equipment supply, software configuration and ongoing support needs.”

He said that an important part of the expansion project was the communication between the control systems for the new plants and the existing site system infrastructure. “They must interact successfully to achieve the targeted production and output goals. We have no doubts that the integration of the old and the new Yokogawa systems will give us the desired result.”

Site and civil works for the expansion project are practically complete and the construction program is progressing well. Final commissioning of the new facility is scheduled for the last quarter of 2007.

The technology going into the project at the Kwinana facility is the most technically advanced and safest that Yokogawa has available from its control systems range.

The CENTUM CS3000 DCS was introduced in 1999 and regularly updated to retain its market leading status. The R3 version, built on the original platform, was introduced in 2001 and continues Yokogawa’s strong R&D commitment. This latest variant includes gateway functionality enhancement for the seamless integration of other control systems.

The ProSafe-RS Safety Instrumented System, released in 2005, was designed for integrated use with process automation applications. Used to constantly monitor the status of process-orientated plants and ensuring safety by shutting down a plant whenever an unsafe condition is detected, the system has also achieved absolute integrity between DCS and safety instrumented systems and eliminated the need for separate monitoring and operating systems.

And, in a significant step for Yokogawa, the DCS in the new prilling plant will utilise Foundation FIELDBUS technology for up to 85% of the total I/O. Both Vnet/IP linked plants will also feature Yokogawa’s recently released CAMS (Consolidated Alarm Management Software) a real-time integrated alarm management function for safe alarm monitoring.

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