

Yokogawa: “the right instruments for the job”

The Queensland Alumina Limited (QAL) refinery at Gladstone on Queensland’s central coast is the biggest refinery of its type in the southern hemisphere. A pro-active instrument replacement program is seeing Yokogawa process control instruments installed throughout the plant – and proving more than a match for the aggressive environment of an alumina refinery.

Commissioned in 1967 with an annual production rate of 600,000 tonnes of alumina, today QAL produces some 3.95 million tonnes of smelter-grade alumina per year. The operating environment is tough on instrumentation, and equipment that will keep performing under normal and extreme conditions is virtually mandatory to maintain target production levels.

According to Ian Kretschmann, instrument support engineer at QAL, an alumina refinery is tough on process instrumentation. “But reliable data is at the very heart of our production and to get reliable data we need reliable instruments. That’s why we are progressively replacing the older instruments throughout the plant with Yokogawa products.”

At QAL since 1993, following some 20 years in the power and metalliferous processing plants of Mt Isa Mines, Mt Isa, Kretschmann has directed the field instrumentation component of plant improvements valued at many millions of dollars at the Gladstone facility. He utilises the internationally recognised Kepner-Tregoe Decision Analysis Process, a rigorous testing and analysis assessment system for decisions, to determine the suitability of field instrumentation equipment destined for installation throughout the plant.

“For instruments to be considered ‘plant standards’, they must be the best device as per the Decision Analysis, and have met all the requirements of the testing procedure,” said Ian Kretschmann. At QAL, testing includes accuracy, robustness, build quality, maintainability, back-up service, stock availability and a full analysis by all interested parties which, in QAL’s case, includes project engineers, technicians and maintenance staff.

“All the Yokogawa instruments we use passed our tests and continue to prove their performance and reliability on site.”

Yokogawa instrumentation installed at QAL includes magnetic flowmeters, pressure and differential pressure transmitters, temperature transmitters, pH and conductivity analysers along with oxygen gas analyser systems.

As part of QAL’s ongoing instrument improvement program at Gladstone, any instrument failures are carefully analysed by site technicians to try to determine the root cause for the failure and if the failure is an issue for manufacturers to address or a result of poor instrument equipment application.

“We are keen to use instrumentation that contributes to our business” said Ian Kretschmann.

“From our point of view, providing feedback to the manufacturer on product performance or premature failure could bring about improvements in that instruments design. Improved instrument performance translates into improved production capability for us.”

Kretschmann believes that there are ‘horses-for-courses’ in terms of instrumentation for particular industries and says that Yokogawa equipment is ideal for heavy industry, mining and minerals processing; areas, where he has many years experience. He argues that there are two primary requirements for process control instrumentation in industrial environments. The first is accuracy.

“In common with every other large processing plant in the world, our operators, chemical engineers and planners rely on data for plant modelling,” he said. “They need accuracy to make accurate models. Variations in readings lead to false modelling, which affects future planning and control.”

He said that some instruments have been known to drift in accuracy, which can have long-term implications further along the process. And in extreme examples, inaccurate readings can ultimately shut down or overload process equipment.

The second requirement is reliability: heavy industry needs virtually zero failures. The instruments must keep going, to keep the process going.

“On these two requirements, along with overall instrument quality and support, Yokogawa gives us the performance – and ultimately the operational peace of mind – we look for.”

For further information, contact Yokogawa Australia on (07) 3902 6651 or email: inquiries@au.yokogawa.com.