

## WINS!

WTIA National Diffusion Networks Project (NDNP) funded by the Federal and State and Territory Governments and industry



### **SUCCESS STORY NUMBER PE09:** GLOBAL BENCHMARKING FOR MANAGEMENT OF WELDING MAINTENANCE – *WA alumina mine and processor takes a leading role*

#### **Promotion of Welding Management**

WTIA believes that the adoption of ISO 3834:2005 *Quality requirements for welding - Fusion welding of metallic materials* by Australian industry will help to create a globally competitive welding industry in Australia. WTIA recommends the adoption of this Standard for all welded fabrication, construction, repair and maintenance work.

By introducing ISO 3834 the client, designer, specifier, purchaser, fabricator and user of welded products will approach welding in the same systematic manner. Through this more systematic approach comes improved process management, increased customer satisfaction, consistent quality of contracted welding and a more competitive welding industry.

#### **Take-up of 3834 in Maintenance Workshop**

An earlier success story (PE-01) spoke about the first three companies in Australia to take up the Standard, situated in the Northern Territory. These companies were all fabricators, but now it has been shown that the system can be of equal benefit to workshops specialising in welding repair and maintenance.

#### **WA Alumina Processor**



Construction of the Worsley Alumina mine site and refinery began in 1980 and the first alumina was produced in April 1984. In May 2000, Worsley completed an \$1 billion expansion and annual

production has increased to 3.1 million tonnes. Alumina and aluminium industries contribute an estimated \$10 billion to the Australian economy every year.

Bauxite is mined and crushed at Worsley Alumina's mine site at Boddington, 123 km south east of Perth, WA. Crushed ore is then transported 51 km by overland conveyor to the refinery. The conveyor is the longest of its type in the world.

#### **Maintenance Tasks**

Repair and maintenance are clearly important issues when managing plant of this size and diversity. Worsley's maintenance workshop deals with a wide range of components such as pumps, valves, pipeline and elbows, conveyor parts, piping systems, boilers and pressure vessels.

Welding activities include repair of carbon steel components and mining equipment, and the hardfacing or build up of both mining equipment and elements of the processing plant in order to resist not only wear caused during the crushing of bauxite but also the corrosive effects of chemicals used in processing. Exotic materials such as 27% Cr white cast iron also call for careful attention.

#### **WTIA Role**

WTIA's Technology Manager Sel Kipling worked with Worsley's staff as they used a WTIA Expert Technology Tool for Self Assessment to ISO 3834 to evaluate the current welding management practices in the workshop. Improvements to the system were then put in place and, conducting a 'ghost' audit to assess the final outcomes, the welding management system was shown to be top class. Worsley now awaits a full assessment by TWI to achieve certification to ISO 3834 and EWF.

#### **Outcomes**

The take-up of ISO 3834 and the use of an accredited Total Welding Management System by a company such as Worsley Alumina is a shining example to other companies, large and small, and leads the way to global benchmarking for Australia's welding industry.

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