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



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SUCCESS STORY NUMBER PE06: WORKING WITH INDUSTRY TO DELIVER PRESSURE VESSELS TO THE MINING INDUSTRY – *WTIA fulfils important role to facilitate the quality and timely fabrication of flash tanks for WA Pinjarra Refinery upgrade*

Background

During the second half of 2004 and into 2005, WTIA was engaged by Alcoa of Australia, an active Member of the NDNP, to supervise and carry out the third party inspection function on six large pressure vessels for the Western Australia Pinjarra Refinery upgrade.

Alcoa worked closely with the Western Australian Government on regulatory and environmental approvals for the upgrade and the project was designed within a strong sustainable development framework. Alcoa contributes economic and social benefits in the Peel and South West region of WA, spending over AUS\$1 billion in the State each year. Construction of the upgrade involved a workforce of up to 1000 people. The WA Government is also a firm supporter of the WTIA's NDNP through the Department of Industry and Resources.



The Pinjarra refinery currently produces 3.4 million metric tons of alumina per annum and the expansion of that facility, already one of the world's most successful and cost efficient alumina refineries, will increase the capacity by 660,000-metric tons.

Flash tanks

The pressure vessels were Flash Tanks, designed to AS 1210 Class 2A, and the largest of the six weighed approximately 35 tonne with

a diameter of 3.7 metres and a volume of 70 cubic metres. The material was carbon steel with an average thickness of 36 mm but going to 40 mm in one vessel. Post weld heat treatment was mandatory on all vessels.

The order for design and fabrication was placed with Elliott Engineering in Kilsyth in Melbourne, and WTIA's role was specified as similar to a coach to ensure:

- The work ran smoothly;
- The work ran to schedule;
- Any problems were anticipated and dealt with;
- All of the requirements of the nominated Standard were adhered to;
- All of the Client specification requirements were understood and adhered to;
- All welding procedure specification and procedure qualification records were reviewed, approved and actually followed during fabrication;
- All Inspection and Test Plans were reviewed, approved and signed off after each stage;
- All Weld Maps were reviewed and approved;
- All Non-destructive testing maps were reviewed and approved; and,
- All Manufacturers Data Reports were checked for final accuracy.

Outcomes

An excellent working relationship developed between Elliott and WTIA, and Alcoa acknowledged that the vessels were amongst the best they had received during the upgrade project.

At the end of the Project, Marian Krol, Elliott's Project Manager said "special thanks to Alan Bishop (WTIA Technology Manager and Coordinator of the Pressure Equipment Industry Sectoral Project) for his engagement at any required time as well on a few Saturdays which allowed finishing job with good quality and on time".

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