



LASER SURFACING Hardwear

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Hardwear Achieves Successful Turbine Refurbishment

Hardwear Pty. Ltd is a high technology company involved in ‘in situ, robotic laser surfacing’ of metallic components, a technology originally developed within the Cooperative Research Centre for Welded Structures (CRC-WS). The company has recently successfully completed its first major contract: resurfacing the leading edge of 162 last and penultimate stage blades on AGL’s B4 steam turbine at Torrens Island Power Station in South Australia.

The technology used by Hardwear was developed over the period 2001 – 2006 in collaboration with a number of CRC-WS Participants (notably Swinburne University of Technology, CSIRO, ANSTO and Connell Wagner) and eleven Australian Power Stations. The technology was first applied on a trial basis to turbine blades in 2004 and these blades remain in service and are showing little sign of wear and steam erosion. It is this performance, backed by laboratory and other technical data amassed over the six years of development, together with the cost advantages of the process, that has encouraged the enthusiastic uptake of the technology by the power industry. The technology is also creating significant global interest and during the Torrens Island work it was demonstrated to a number of international and local companies.

The technology combines the latest laser, laser torch and robotic technology to resurface worn components ‘in situ’ without the need for repair in remote workshops and extended downtimes. In the case of steam turbine blades, the process is applied on site, in the turbine hall of the power station, leading to clear cost and downtime savings.

Dr. Colin Chipperfield, the previous Chief Executive Officer of the CRC-WS and the General Manager of Hardwear, said: “the success of the technology and Hardwear was testament to the dedication and inventiveness of the research team, led by Professor Milan Brandt at Swinburne University of Technology, and key representatives of the power industry”.

Mr Kym Wickstein, Technical Support Engineer Turbines, AGL, said: “AGL Torrens Island Power Station has spent much time and effort in the support of this technology both in the development and field trial stages and is pleased with the successful application of this innovative blade cladding technique to the LP Turbine final row blades. The in-situ application of this erosion resistant cladding has resulted in considerable savings to our company”.

Shareholders in the company include Swinburne University of Technology, The Welded Structures Foundation and the Centre for Energy and Greenhouse Technologies.

For further information, please contact:

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