STANWELL POWER STATION
CASE STUDY

The companies

PearlStreet, Furmanite and Silcar are among many Australian companies involved in a four-year, $87 million upgrade of the low-pressure turbines and generators at Stanwell Power Station, 22km west of Rockhampton, in central Queensland.

Soumen Dutta, ICN's Government Projects Coordinator, said Stanwell Corporation asked the Industry Capability Network to assist its head contractor, Hitachi Australia, to obtain local suppliers. Mr Dutta said ICN put forward names of suitable companies to fulfil eight trade requirements for the project.

Each of the four generating units at Stanwell is being progressively upgraded during scheduled four yearly maintenance outages.

PearlStreet Pty Ltd is providing non-destructive testing services for the upgrade. Metallurgist Simon Meusburger, PearlStreet's Overhaul Team Leader, said his company was involved in analysing the integrity of pipework, pressure vessels and machinery components.

Varied techniques were used, including radiographic weld assessment, ultrasonic flaw detection, fluoro and colour contrast magnetic particle inspection, and dye penetration, to detect cracks and subsurface defectsThe company also conducted microstructural replications of welds and parent material to ascertain the remnant life of the components and hardness testing to infer material tensile strength.

Mr Meusburger said PearlStreet's work allowed Stanwell to undertake corrective repairs and long-range scheduling of maintenance to maximise plant life.

Furmanite Australia Pty Ltd is the Australian arm of a global company that provides on-site and on-line plant and pipeline maintenance. On the Stanwell project, Furmanite has completed on-site rotor machining on the first turbine and has now progressed to coupling boring. The contract for the first unit is worth $155,000.

Silcar was launched in 1993 as a purpose-built outsourcing maintenance organisation to provide the power industry with the skilled resources and management for mechanical and electrical maintenance services.

Silcar High Voltage & Electrical Services won a contract to provide high-voltage testing on the Stanwell project. As each generator is rewound, Silcar provides progressive testing to ensure the integrity of the work performed. The company also tests at the completion of the process to ensure the generator is ready to go back online. The contract is worth around $100,000 per unit for Silcar.

INDUSTRY CAPABILITY NETWORK QUEENSLAND
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The opportunity

Stanwell Power Station, sited on 1,600 hectares of land, became fully operational in 1996. Construction took seven years, with infrastructure built to withstand cyclonic winds.

There are four generating units at Stanwell, each with a capacity of 350 MegaWatts (MW). The four units and their components are housed in a 20-storey boiler house and a turbine hall the length of three football fields.

Stanwell Corporation is performing an upgrade to improve the efficiency and output production capacity of the four units. The low-pressure turbines and generators of each unit are being replaced, refurbished or upgraded. This is likely to increase generation capacity to a total of 1,464MW.

Ian Stapleton, Senior Project Engineer for Stanwell, said the generators and turbines were not being totally replaced. But, as each component was dismantled, it was tested thoroughly to determine whether it could be refurbished and upgraded or replaced.

The Queensland Government-owned Stanwell Corporation is responsible for purchasing and constructing capital equipment for the project and contracted Hitachi Australia to supply and install upgrade components for the turbines and generators.

Installation of replacement or refurbished equipment occurs in four, two-month periods over the four-year duration of the project, starting in September 2008.

Mr Stapleton said selecting the subcontractors was “a two-way process”. Hitachi had its own preferred subcontractors from previous experience on similar projects and the initial installation at Stanwell, but ICN’s assistance provided “a wider field of different contractors to approach”.

“It’s a very specialised field,” he said. Mr Stapleton described his role as “the middle man”, liaising with ICN and Hitachi. “Once ICN knew what type of contractors Hitachi needed, it was able to compile a list of what was available.”

Some Hitachi workers were specialists from Japan, and assistance from the Australian companies they worked with was very valuable. “There’s a good knowledge transfer. There’s not a lot of this type of work done in Australia,” Mr Stapleton said.

The benefits

Linsay (correct) Muller, Business Manager for the Technical & Engineering Services Group of Silcar High Voltage & Electrical Services, said the service provided by ICN was “very valuable”. “It puts us into the market in areas we may not be in, and gives us exposure,” he said.

PearlStreet's Gladstone Branch Manager Rob Hooley said ICN's role in projects like Stanwell was "a real positive". Getting "local content" on projects was beneficial from a cost and social responsibility perspective. For contractors like Hitachi, with whom PearlStreet had worked in the past at Stanwell, it broadened the options and allowed Hitachi to "cross-reference performance" of known suppliers with new ones.

Furmanite Sales Manager Graeme Berry said the company had a long-standing, global relationship with Hitachi and had performed similar work on power stations in Australia and overseas. However there was value in organisations like ICN to assist other companies to get the opportunity to participate on major projects.

According to the Manufacturing Sector Impacts Report 2007, compiled by ICN and Australian Economic Consultants Group, every $1 million of manufacturing business retained in Australia or freshly generated by Australian companies creates 12 full-time jobs. Every $1 million of manufacturing business retained or generated by Australian manufacturers also generates $394,000 in taxes and charges, which benefits Australians as the government can reinject it into the economy in areas such as health and education.

For more information or advice, please contact:

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PearlStreet

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