CASE STUDY

SEACLIFF - Adelaide, Australia

KEY STATISTICS

Customer: John Holland Pty Ltd/Leed Engineering & Construction Pty Ltd (NIAW)
Site Owner: South Australia Water
Location: Adelaide, Australia
Net Head: 86.1 metres
Flow: 1525 litres/sec

Turbine type: Gilkes Francis 425 G270
Output power: 1165 kW
Mean Runner Diameter: 425 mm
Speed: 1500 rpm
Project Commissioned: November 2013
Scope of Supply: turbine, inlet valve, hydraulic power unit, synchronous generator with flywheel, lube oil unit, control and instrumentation system and cabinet

Gilkes were selected as the preferred supplier for the mini-hydro equipment within the Seacliff facility as part of SA Water's North South Interconnection System Project (NSISP). The Project was understood from the very beginning to be challenging, both from a technical and schedule point of view. The Gilkes scope of supply included the design and manufacture of the mechanical and electrical equipment, operating and maintenance documentation, installation supervision and commissioning, including integration into the existing network.

A Gilkes' project team was allocated to engineer the project from start to finish, with the Contractor and Customer having a primary point of contact through a contract engineer. This was particularly important given the complexity of this project and the number of other companies involved, and is an approach that our customers value.

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Seacliff Facility, Adelaide

Generator

Assembly of turbine at Gilkes factory, UK.

The challenging technical requirements of the project were managed directly with the Customer, with there also being numerous requirements specific to the customer and Australia. The water hydraulic requirements necessitated a relatively high speed machine running at a relatively high pressure for this type of Francis turbine, and also required a large flywheel. The pressurised downstream pipework fed directly in to the consumer network of South Adelaide. The small facility was positioned within a residential suburb of Adelaide, therefore requiring a compact design with strict noise targets.

The turbine was designed, built and pressure tested at our factory in the UK before being airfreighted to site in Adelaide. The technicians who assembled the turbine at our factory also supervised the safe and successful installation of the Gilkes equipment in Australia.

To ensure all contracted components e.g. generator, main inlet valve, etc. integrated well and performed as required, all the factory inspections and testing were witnessed by a Gilkes engineer before being authorised for delivery. The same engineers who had been the customer's primary point of contact for the project also commissioned the Gilkes equipment and its integration in to the existing water network and site wide control system.

The consistency of ownership throughout the project supported efficient engineering, installation and commissioning, and ensured the customer's expectations & preferences were achieved.

The programme milestones originally set at contract signing were achieved, with the handover being achieved on the day forecast over 12 months previously in November 2013.

Mark Dedman, NSISP Project Director commented: "The delivery of the Seacliff mini hydro facility presented multiple technical and schedule challenges. Through the collaborative efforts of the integrated project team working with Gilkes, the facility was successfully delivered and commissioned safely and on time."

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