



Utilities & Infrastructure



PRACTICAL[®]
ENGINEERING

SEQWATER WIVENHOE DAM 79T GANTRY CRANE

Practical Engineering were engaged by Seqwater for the 25 year refurbishment and recertification of the 79T portal crane located on the spillway at Wivenhoe Dam.



The crane is an electro-hydraulically operated cantilever portal crane. Practical Engineering engineers prepared a comprehensive report on the mechanical, structural and electrical works required to form the scope of works for the task and then proceeded to deliver those items. Included were NDT, magnetic particle testing on the structure, replacement or refurbishment of mechanical equipment such as motors, gearboxes, hoist drums and hydraulic pumps, drives and transmission components. The scope also included an overhaul of the electrical instrumentation including PLC and CRANE-DAS data logger installation.

Site works required careful risk management planning and execution to ensure safety of the public by working over traffic from Brisbane Valley Highway while performing investigation and upgrade works.

Practical Engineering provided engineers to design code-compliant parts and certification of the crane, fitters for on-site works and installation, boilermakers for the manufacture of specialised parts and project managers to supervise the work of electrical sub-contractors.

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The Practical Engineering workshop provided offsite facilities and staff to dismantle, inspect, refurbish and reassemble components from the crane where necessary.

Practical Engineering installed our crane data logger CRANE-DAS™ that provides feedback of crane usage. This is a product has been developed and tested in-house demonstrating our capability for innovative design of robust electrical programming and instrumentation. Further in-situ testing has proved our design.

The concept designs of the output and hardware of the PLC and SCADA control systems were performed by Practical Engineering engineers. In support of these activities J&P Richardson, our sub-contractors, developed the software designs and systems. Full theoretical or simulation FAT testing was performed at the J&P Richardson workshop prior to site installation and testing.

Services and outcomes delivered:

- 25 yearly Re-certification to Australian Standards
- Failure Analysis
- Mechanical Design
- Electrical Design
- Custom crane Data acquisition
- System development
- Refurbishment
- Commissioning and Load Test



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