



## CASE HISTORY

### High Capacity Retractable Injection Systems

#### Background

A major oil refinery was experiencing problems with scaling in their main power generation steam turbine unit. Due to scale formation on the turbine blades the unit was operating at the maximum allowable bearing loads and temperatures and an unplanned shut-down was imminent. The cost of a shut down was estimated to be in the region of £200k (USD 370k) per week.

The Turbine manufacturer and the Operator identified a potential on-line solution to the problem based on injecting water into the superheated steam flow so that the droplets formed would perform a cleaning action on the turbine blades as they passed through the unit. The Operator identified the need for a custom injection device and contacted Cormon for a proposal.

#### Project

Working to an extremely tight timetable, Cormon and the Operator developed a design datasheet for the requirement that included the required injection capability plus the ability to retract the quill from the high velocity superheated steam flow, on-line, between cleaning intervals. The resulting high temperature packing gland, quill with atomizing nozzle and integral insertion/retraction frame was manufactured, tested and delivered in six weeks, half of the usual lead time for complex custom designs of this type. Cormon were also able to certify the unit as compliant with the Pressure Equipment Directive (97/23/EC) without delay due to their Module H accreditation.



#### Completion

Having hot-tapped the line and received the quill assembly as planned, the Operator was able to commence the controlled injection of steam condensate into the steam feed upstream of the turbine. The resulting cleaning was immediately effective and the condition monitoring system indicators returned to levels close to those seen on the turbine when new. The expensive unplanned shut down was avoided.

This project is one of many where our custom engineering skills and experience with high pressure access systems and injection technology has been brought to bear on a specific customer problem. By working in an open and flexible way directly with the end-user's technical team we were able to deliver an effective and certified solution to a tight deadline. To discuss your process intervention requirement please contact James Honeysett at [sales@cormon.com](mailto:sales@cormon.com) or +44 (0)1903 854800

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