

Turbine Controls Limited

52 Kenilworth Drive, Oadby, Leicester LE2 5LG, England

☎ +44 (0)116 271 7248 📠 +44 (0)116 271 7250

✉ sales@tcluk.net www.tcluk.net

**PROJECT SUMMARY**

DATE	March/April and Oct/Nov 2007	LOCATION	Cowes Power Station, Isle of Wight, UK.
SUBJECT	QUAD OLYMPUS GAS TURBINE CONTROL SYSTEM RETROFIT		

Cowes Power Station operates two 70 MW diesel fired simple cycle Olympus gas turbines for peak load and synchronous compensation duties. The units were originally installed in 1982 by Rolls Royce. Both units had been retrofitted with Woodward Netcon governors in the early 1990s.

**The Problem**

The Netcon governors had become obsolete with spare parts availability no longer guaranteed. The Units reliability had dropped below the 95% required by RWE's contract with National Grid. Different settings being required by the governors between summer and winter operation to achieve engine light off. The main sources of unreliability were readily identified as:

- The electro-mechanical fuel control system and on engine fuel pumps.
- Automatic sequencing control.
- Governor set-up

The Solution

Turbine Controls Ltd were contracted to provide a solution that would use parts which would not become obsolete for the next 20 years or better and meet the required start reliability of > 95%. The control system retrofit consisted of: -

- A new fuel control governor and automatic sequencer control system which was implemented using an Allen Bradley ControlLogix 5000 PLC based system.
- The Olympus off engine fuel control system on-engine HP fuel pumps were removed and replaced with the TCL Posiflow® off engine liquid fuel system, using a variable speed electrically driven gear fuel pump to modulate the fuel to the Olympus engines.
- Dual redundant SCADA system providing both local and remote control and monitoring. The remote control and monitoring being done at Fawley Power Station on the mainland. The SCADA system also provides a detailed alarm reporting and diagnostic tools to aid in fault finding.

TCL were responsible for the design, manufacture, installation and commissioning for all equipment supplied. All software for the PLC and SCADA systems was written and tested by TCL engineers at our Leicester HQ.

After the retrofit different settings were no longer required for summer and winter operation and both units now meet >95% reliability required.

TCL continue to provide technical assistance and support to our customer at Cowes Power Station.

