

PROJECT SUMMARY

DATE	16 September 2003.	LOCATION	Petroleum Development Oman Hubara & Sahma Pumping Stations.
SUBJECT	9 x RUSTON TA1750 GOVERNOR AND FUEL SYSTEM'S RETROFIT.		

The Problem

Petroleum Development Oman use Gas Turbine driven pumps to move crude oil from gathering stations in the interior to oil terminals at the coast. Power is derived from either Natural Gas or when this is unavailable, Distilate fuel.

Many of these machines are over 30 years old and the original governing and fuel-modulating equipment was causing problems with plant availability and reliability.

This problem was exacerbated as wellhead pressures diminished and the demand on pumping stations increased. Furthermore, the skills required to maintain and repair the hydro mechanical governing systems were becoming increasingly difficult to source.



TCL were commissioned to address these issues.

The Solution

TCL conducted site surveys and interviewed operations and maintenance staff. These surveys confirmed that the most significant factor influencing reliability and availability was the poor performance and extensive time-to-repair of the original governor and fuel modulation equipment. TCL concluded that a governor and fuel system retrofit programme would provide the most cost-effective means to boost the machine's performance.



To minimise disruption, the modification kit, including all modules, panels, pipe sections cable etc. were prefabricated. Trenching and cable laying was carried-out before the machines were taken out of service.

The original Hydro-Mechanical Governors, Gas Throttle Valves, Liquid Fuel Pumps and Liquid Throttles were removed and replaced with TC95-03 Programmable Governors, EGV3000 Electrically Actuated Gas Throttles and PosiFlo Liquid Fuel Systems. The de-struct, construct, test and commissioning was completed in five days per machine. A total of nine machines were modified at Hubara and Sahma pumping stations.



The results have proved to be an unqualified success with significant improvements in start-up reliability and availability at a per-unit cost of less than \$80k.