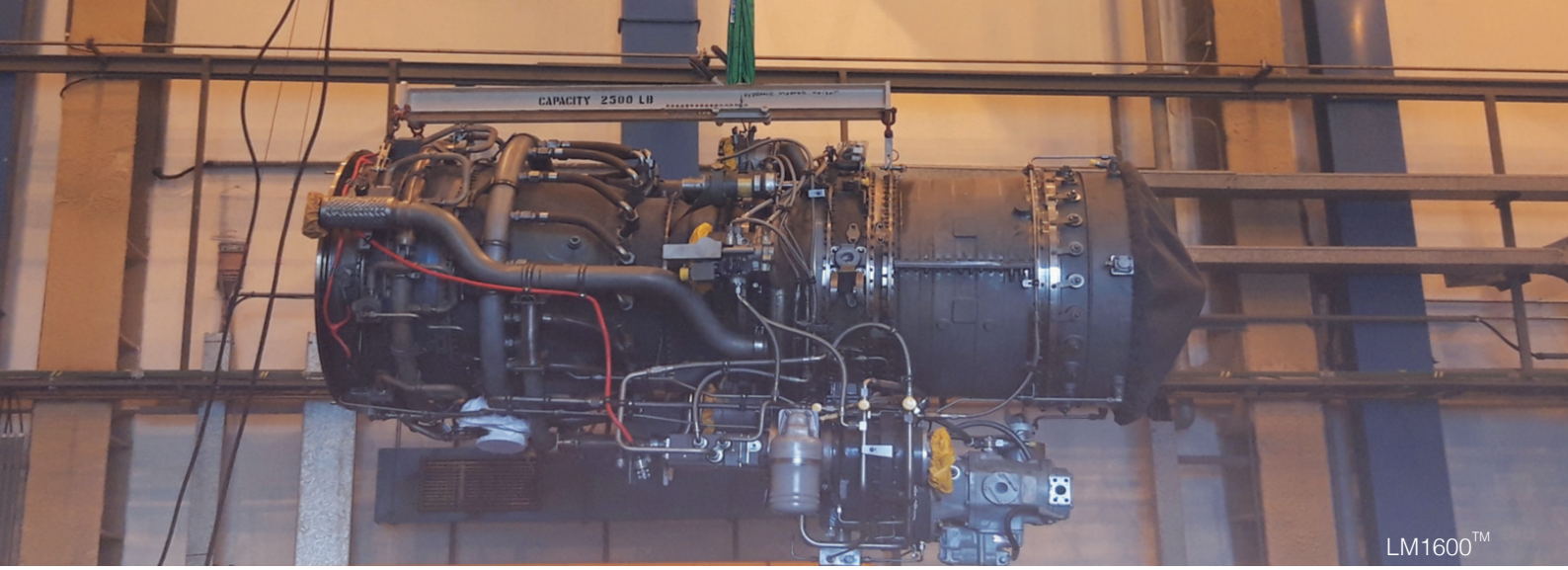

LM1600™

CZECH REPUBLIC LM1600™ UPGRADES

Problem

HPI's Client, a utilities company based in the Czech Republic, operates 4 No. LM1600™ Gas Turbines across 2 sites located in country.

The LM1600™ Gas Turbines were employed in a gas compression application, with low running hours and limited OEM recommended maintenance. The associated engine control systems were Process Application Controls (PAC). These were the original control systems implemented during the install and commissioning of the packages which was over 25 years ago. The age of the existing control system gave the client issues with limited visibility of the system functionality, along with decreasing spares availability.

The turbine fuel delivery systems were also in the as installed condition, and consisted of HP pumps and control valves which were now deemed unreliable and obsolete.

The HPI Energy Services Solution

Due to a sound legacy of success in upgrading LM Series engines and its familiarity supporting the PAC controllers, HPI Energy Services Limited (HPI) was approached to offer its upgrade solution. HPI acted as prime contractor on the project and managed 3 further sub vendor companies throughout the duration of the project, including supervision of mechanical overhauls at an OEM licensed facility.

HPI led a full onsite survey of the units, and designed and implemented a full upgrade of the control and fuel systems of the turbines. The project also required the implementation of dual language HMI.


Control panel Crane lift into control room


Removal of LM1600™ engine core for essential maintenance

HPI implemented Allen Bradley ControlLogix with open architecture components, giving the client access to the program to assist in trouble shooting and maintenance requirements. Utilisation of Allen Bradley components within the design allows the client a greater availability of spare parts.

HPI also designed and implemented a replacement of the existing fuel delivery system pumps (external and on engine) and the liquid fuel valve, with an HPI Positive displacement pump and VFD controller. This new pump and motor configuration delivers the required fuel to the turbine at any time by modulating the speed of the motor, resulting in increased and decreased flow to the turbine.

KEY BENEFITS

This solution offered a number of cost and convenience benefits to ENI including:

- Access to the control system
- Greater visibility of package performance, reliability and functionality.
- Enhanced troubleshooting capabilities
- Greater availability of spares
- Commonality of parts across the turbine generation plants
- Reduced fuel delivery system maintenance.

To see how HPI Energy Services can help you, please call us on +44 (0)1522 519944 or email info@hpienergy.com

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