



COMPRESSOR CONTROL

MIDDLE EAST COMPRESSOR STATION RETROFIT

CASE STUDY



Advanced Power Management
Control, Protection & Monitoring
SOLUTIONS



92 Kifissou Av.
Athens GR 10443



www.maseurope.com



info@maseurope.com

COMPRESSOR CONTROL

The Problem

A Gas compressor station of a Middle East customer, comprised of 2 x RR AVON GTs with Dresser Rand Compressors. The units were over 20 years old and had reliability problems. Operators often faced unexplained trips but also faced difficulty in mainlining process operational levels.

To resolve the situation the customer planned for a major shutdown where all automation and control systems would be upgraded. The customer launched a tender whereby it required the replacement of all local machine instrumentation, local control panels, remote control panels, central ESD & Load Sharing systems as well as the control room equipment. The project was going to be awarded on an E&P basis with the customer undertaking the installation and the contractor offering supervision and commissioning.

The Solution

Although MAS' solution was not the most economical one, it was selected by the customer due to its technical advanced features and its high level of customization to the existing systems. MAS' proposal included latest technology control and protection systems to be installed in the new control room. Local panels were to be latest technology EX-HMI system. This topology provided better equipment life time and operational environment allowing engineers to resolve issues without shutting down the station.



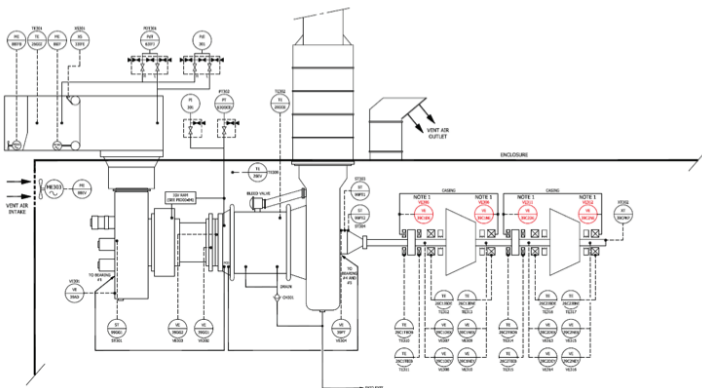
Panel during FAT Tests

Scope of works undertaken

- Systems Detail engineering
- Machine optimization study
- System procurement & assembly
- Software development
- Installation supervision
- System commissioning

Scope of Supply undertaken

- New Unit Control Panels including:
 - Redundant Unit Control and protection system with latest technology anti-surge algorithms
 - Vibration monitoring system
 - Unit ESD system
 - Unit F&G system
 - Unit HMI System
- Turbine Gas Fuel skid
- New Local control panel with touchscreen ex-HMI system.
- Compressor load sharing system
- Station ESD & F&G systems
- Control room systems with:
 - Redundant central Scada system
 - 2 x Operation workstations
 - 1 x engineering works station



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The Result

MAS executed the project with the given time line of 8 months.

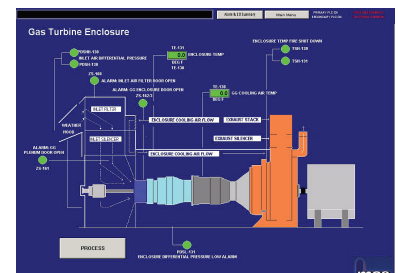
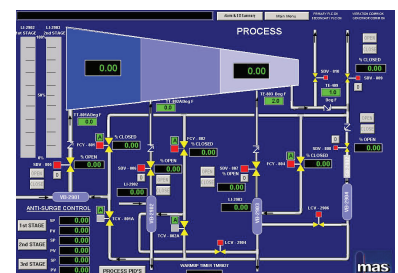
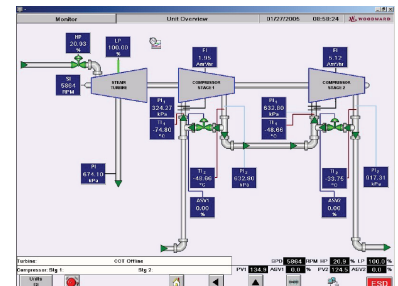
All systems were installed within the given time frame of the station shutdown.

The new system increased the unit availability by 150% and the unit reliability by 200%.

Operations are now streamlined, minimizing excessive troubleshooting and maintenance time spent by engineers.

Most importantly the unit operation systems are now backwards integrated with the station DCS system and the process control includes also compression operations.

The latest technology molecular weight independent anti-surge algorithms and the advanced load sharing systems ensure that the compressors are utilized more efficiently since they can be safely loaded to close to their designed capacity.



MAS SA is one of the few engineering companies in Europe specializing in the **upgrade, design, development and installation of advanced power management control, protection and monitoring systems.**

Covering a wide area of expertise for over **45 years**, we **provide solutions for complex problems** both in the Industry of **Marine**, as well as in the Industry on **Land** (Power, Oil & Gas and Heavy industry).

For any further information please contact us via email at info@maseurope.com