

# Make more use out of your turbine outage! More availability, more flexibility, more ...

## SPPA Solutions

offer the perfect modernization for gas and steam turbines of all manufacturers – fully integrated and from one single source. Extensive power station and turbine know-how guarantees maximum quality and reliability.

## The Task

Following a service life of more than ten years the first measures for lifetime extensions are pending for gas and steam turbo set in process technology. Longer downtimes are planned for this.

The electrical devices on the turbo set are also subject to the ageing process in a similar way to the mechanical components of the turbines. The growing number of operating malfunctions and the increased risk of failure through ageing components reduce the availability of the system significantly.

Often a lower degree of automation, bottlenecks in the supply of spare parts and limited diagnostic functionalities are sufficient to no longer ensure economic operation in line with the requirements of today's energy industry.

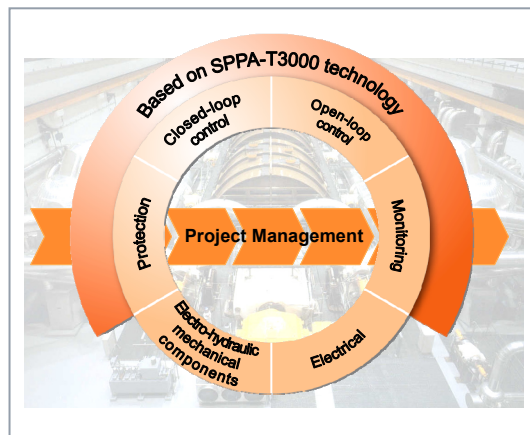
## Our Solution

"Outage time is valuable time" – use planned downtimes for the turbo set to get the electrical and process control equipment in shape too.

The SPPA portfolio enables upgrades or modernizations for turbine control, turbine hydraulics, electrical engineering and the vibration monitoring with additional diagnostics and analysis options from one single source.

SPPA-R3000, the solution for modernizing gas and steam turbo sets is based on the latest SPPA-T3000 Control System. It can be used for all turbines. SPPA-T3000 enables convenient remote monitoring, remote diagnostics and troubleshooting on all machine components.

From the SPPA-E3000 electrical engineering portfolio we are replacing the excitation systems



All supplies and services for optimum use of your turbine outages – the SPPA portfolio.

including the voltage regulator and where required the start-up frequency converter as well as the synchronization and protection devices.

SPPA-D3000 Vibration Monitoring – fully redundant in operation, scalable and highly fault-tolerant – rounds out the range. It is fully integrated into the SPPA-T3000 Control System.

The combination offers a uniform interface for operations and observation with simplified engineering and extensive diagnostics functions.

## Your Benefit

- Greater operational safety and availability through reliable and redundant system components
- Increased flexibility and expanded lifetime through modern automation technology
- Reduction of maintenance costs through consistent system technology
- Minimized risk through an optimized and customized overall solution from an experienced partner
- No additional outage required

Siemens Power & Process Automation (SPPA)

Answers for energy.

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