Modernization of Machine Monitoring
Steam turbines DG/DK

MAN PrimeServ provides contemporary machine monitoring systems to further improve the supervision of essential machine and process parameters on existing steam turbine units.

Our steam turbines are operated in numerous applications ranging from mechanical drive for compressor trains to generator drive for power generation. In addition to this, the steam turbines are used for the supply of constant pressure process steam, using the surplus energy to drive compressors or generators. Although our steam turbine units are designed to serve the process in a reliable manner over the entire service life, under these conditions a possible machine failure can lead to significant production losses and repair costs. On this account, the reliable and continuous monitoring of essential machine and process parameters can make the difference between profit and loss for the entire year as possible defects may be detected and eliminated at an early stage.

Modernization Solution
The continuous monitoring of parameters such as vibrations, axial displacement, temperatures, pressures and speeds is a proven method for anticipating and preventing possible machine failures. To enable a reliable supervision of these parameters, MAN PrimeServ provides customized, contemporary machine monitoring systems for the modernization of existing steam turbine units. As MAN PrimeServ is able to take care of the entire machine unit, meaning the complete loop as well as the necessary mechanical modifications, the comprehensive modernization solution also provides for that the related systems are in accordance with current standards. Moreover, to facilitate remote service support, MAN PrimeServ also supplies an optional diagnostic and service package tailored to the specific machine and process.
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To provide for high reliability, user-friendly operation and long-term service support, all components of the machine monitoring system, as the monitoring cards, the sensors and the field equipment, are realized on industrial standard platforms as Bently Nevada or Brüel & Kjaer Vibro:

- Fail-safe design
- Potential free relays
- Redundant AC and DC power supplies available
- Safety monitor modules, e.g., for axial displacement measurement, available
- Integrated analysis functions
- Recording of data loggings, trends and alarm messages to PLC based unit control system

Benefits
The modern machine monitoring system enables reliable protection of the steam turbine unit against possible damages due to abnormal operation behavior:

- Continuous monitoring of essential machine and process parameters
- Increased protection against possible damages and subsequent costs
- Enhanced database for maintenance and outage planning
- Long-term service support
- Optional transfer of data to irds® system for remote service support

Comprehensive Modernization
MAN PrimeServ provides comprehensive modernization concepts to modernize your equipment – no matter if you want to optimize reliability, operating costs, environmental sustainability or any other characteristic. Please contact us for further information.