Siemens Energy presents new control system for industrial steam turbines

With TURLOOP CS Siemens Energy Service offers a control system for industrial steam turbines that is based on proven standard components to provide high operating safety and reliability, flexibility and user friendliness. Market launch will take place in early 2010.

The TURLOOP control system, with global sales of more than 400 systems to date, provides Siemens Energy Service with a successful automation system for industrial steam turbine applications. To supplement this, TURLOOP CS was developed as a compact, budget variant. The system platform is based on proven Simatic S7 standard components, allowing flexible use for industrial steam turbines including extraction turbines with up to two controlled bleeders and irrespective of whether these are used as generator, compressor or pump drives. Further high performance features of TURLOOP CS include provision for up to five configurable process controls and a maximum of eight steam valve actuators with position controllers if required. The new control system also implements limit controllers for generator load, inlet pressure and backpressure, as well for extraction and wheel chamber pressure. Linearization curves can be parameterized for all eight actuators. The system also permits automatic startup of the turbine and runup to nominal speed, while distinguishing between cold, warm and hot starts.

The system features on-board two-channel speed measurement for eddy-current sensors. TURLOOP SMM-DP speed measurement allows connection of all standard eddy-current sensors and proximitors, as well as interfacing with electronic overspeed protection systems via an adapter module. Where eddy current sensors are used, continuous monitoring of gap between speed sensor and pulse wheel is possible. Speed actual values are transmitted to the central computing unit fast and error-free via a PROFIBUS link.

Parameterization menus are used to adapt the system to the turbine via a 12-inch touchscreen, this also permitting comfortable system operation during turbine operation. Customer designations...
and tags from standard identification systems (KKS) can be stored and displayed in the system. No additional software or hardware is required here for parameterization.

Use of standardized and tested hardware and software ensures operating safety and reliability. Parameterization errors are detected, thus preventing "impossible" configurations. Self-diagnostic features are integrated in the control system. Provision is also made for backup of configuration data to a USB drive.

Power plant service is part of Siemens’ Environmental Portfolio. In fiscal 2009, revenue from the Portfolio totaled about EUR23 billion, making Siemens the world’s largest supplier of ecofriendly technologies. In the same period, our products and solutions enabled customers to reduce their CO₂ emissions by 210 million tons.

The Siemens Energy Sector is the world’s leading supplier of a complete spectrum of products, services and solutions for the generation, transmission and distribution of power and for the extraction, conversion and transport of oil and gas. In fiscal 2009 (ended September 30), the Energy Sector had revenues of approximately EUR25.8 billion and received new orders totaling approximately EUR30 billion and posted a profit of EUR3.3 billion. On September 30, 2009, the Energy Sector had a workforce of more than 85,100. Further information is available at: www.siemens.com/energy.
With TURLOOP CS Siemens Energy Service offers a control system for industrial steam turbines that is based on proven standard components to provide high operating safety and reliability, flexibility and user friendliness. Market launch will take place in early 2010. The picture shows layout inside the TURLOOP CS cabinet. The two speed monitors are mounted at the bottom to the left, with the input and output modules in tried and tested Simatic S7ET-200M technology to the right of these.

With TURLOOP CS Siemens Energy Service offers a control system for industrial steam turbines that is based on proven standard components to provide high operating safety and reliability, flexibility and user friendliness. Market launch will take place in early 2010. The picture shows a front view of TURLOOP CS with its 12-inch touchscreen.