



Press Release

Export success with turbine blade test systems

Erlangen, December 17, 2007 – Thermosensorik GmbH today announced it had won two major orders for turbine blade test systems with a total combined value of approx. €2m. Two gas turbine manufacturers in the UK and China have each ordered a turbine blade test system from the Erlangen-based experts in fully automatic, non-destructive testing.

In recent weeks Thermosensorik GmbH has received two major orders from international companies belonging to the Siemens Power Generation Operating Group. And Thermosensorik also supplied Siemens Power Generation with the world's first robot-aided system, based on the heat flux thermography principle, for non-destructive testing of turbine blades. This is currently in use at the Berlin gas turbine plant for serial testing of all turbine blades produced there. Now the same Operating Group has ordered two more turbine blade test systems for manufacturing locations in the UK and China.

The robot-aided turbine blade test systems measure the three-dimensional diffusion of heat inside the material using highly sensitive Thermosensorik thermal imaging cameras. If there are faults or defects inside the material, the heat flux is disrupted, and the faults are pinpointed and imaged. Of the established technologies for non-destructive testing, heat flux imaging analysis fulfills a particular combination of requirements: it checks an entire area extremely quickly and fully automatically in each case, and can "look into" the material to find evidence, for instance, of delaminations or to measure layer and wall thicknesses as well as test the cooling behavior of turbine blades.

On the basis of the first industrial test system for blades of large 70-340 MW gas turbines, Thermosensorik has now developed the second-generation system concept. The level of automation of the systems was upgraded, from automatic control of the



test procedure to fully automatic testing, which now also includes automatic fault recognition and operator-free, objective good/bad classification. The new, modular system concept is now used for the other Thermosensorik test systems too, e.g. for fully automatic, non-destructive testing of welded joints in the automotive industry.

The system in the UK is the first time Thermosensorik's turbine blade testing has been used on smaller blades for turbines with a power of 5 MW and upwards. So in future not only all types of stationary power plant turbines for power generation but also jet engines for air travel can benefit from Thermosensorik test technology.

Tom Stenger, Division Manager Factory & Technology, on the system at Siemens Gas Turbine Parts Ltd in Shanghai, China: "The Thermosensorik test system is an indispensable element in our quality assurance chain for our high-temperature turbine blades. The prototype system in Berlin exceeded all our expectations. When I was put in charge of setting up Siemens turbine blade production in China I realized right from the outset that based on the positive experiences we need another high-tech system of this type here in the plant too."

The systems are used for automatic testing of turbine blade production at several stages of production. The result is reliable quality assurance during production and considerable cost savings. The managing director of Thermosensorik GmbH, Thomas Hierl, expects the current new orders to act as a signal for all manufacturers of power plant turbines and jet engines: "The test systems are the guarantee of top quality and cost savings. Siemens Power Generation is once again relying on Thermosensorik's expertise – and not just in Germany. Others will follow."



About ThermoSensorik GmbH

ThermoSensorik GmbH was founded in 1998 as a spin-off of the University of Erlangen-Nuremberg. As a pioneer in the field of heat flux imaging analysis ThermoSensorik has made decisive contributions to the development of this new technology for the non-destructive testing of materials and components. Today, the product range comprises high-resolution infrared camera systems (including the one with the fastest frame rate), manual test systems for laboratory use and fully-automated, in-line test systems for the non-destructive detection of cracks, cavities, delaminations, faulty joints etc. as well as for the fast measurement of layer and wall thicknesses by means of heat flux imaging.

ThermoSensorik employs 30 highly qualified people and possesses a tight network of skilled suppliers. Well over 100 installations at research institutions and in industry prove the capability of ThermoSensorik products on a daily basis. Besides manufacturers of turbines, some of the largest German car manufacturers use ThermoSensorik test systems for non-destructive testing in serial production.

ThermoSensorik was awarded the Nuremberg Chamber of Commerce's Founders' Prize in 2003. Since 2006 Siemens AG has had a minority holding in ThermoSensorik GmbH via its subsidiaries Siemens Venture Capital GmbH and Siemens Technology Accelerator GmbH.

For further information, go to: www.thermosensorik.de

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