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Sensitive heavyweights

Two SW winches lift 318 tonne turbine

The demand for energy is increasing all over the world, and this includes Thailand. The country needs around 4 percent more electricity every year. At present Thailand is relying on powerful combination gas and steam power generating plants – energy production is planned to rise from 39 GW to 52 GW by 2020. German companies too profit from this situation. Siemens has an excellent reputation as a manufacturer of up-to-date gas turbines and STAHL CraneSystems is extremely successful delivering wire rope hoists and rope winches to transport the turbines, which weigh over 300 tonnes, in the power stations.

One of the current projects is Wang Noi gas power station, 70 km north of Bangkok. The plant was built in the 90s, initially comprising three blocks and with an output of 1.91 GW. Wang Noi is now to be upgraded by a fourth block and 769 MW by 2014. The order for the crane systems required was placed with ALLA Ltd., STAHL CraneSystems' Thai crane building partner. In addition to several small cranes with S.W.L.s of 25 and 40 tonnes, the order included two heavy lifting cranes equipped with rope winches, with an S.W.L. of 180 tonnes each.

For loads in this range, ALLA relies on STAHL CraneSystems' new SW winch. With its high safe working load, compact dimensions and low-maintenance construction it satisfies the requirements of even demanding customers. However when positioning the gigantic gas turbines, more things count than mere lifting capacity, as the heavy load must be set in place sensitively, with millimetre accuracy and as far as possible without jolting. Frequency inverters as standard on all drives ensure smooth starting and braking characteristics and minimum load swing. Both cranes are equipped with 25 t STAHL CraneSystems wire rope hoists as "smaller" auxiliary hoists, one crane also has a further wire rope hoist with 12.5 t S.W.L.

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The crane systems were commissioned at the end of 2012 and were already in use in December for transporting and positioning three 316 t and 318 t turbines. For this application the heavy lifting cranes are coupled mechanically and switched over to tandem operation. In this mode all travel and hoist motions can be synchronised by remote control – a challenge both for the crane technology and the safety of the system.

The whole power station block is to be completed in March 2014. The heavy lifting cranes are needed for erection work during the construction period, later they will be used as maintenance cranes for working on the gas and steam turbines.

Wang Noi is the second project that ALLA has equipped with cranes for EPC contractor Black&Veatch. In 2010 the Thai crane builder supplied a crane with a 130 t winch and 25 t auxiliary hoist for the new Block 5 of the “Glow” power station. These hoists too were supplied by STAHL CraneSystems.

STAHL CraneSystems supports crane builders on demanding projects such as these suspension cranes with its wide range of products and sophisticated design solutions. Particularly qualified crane builders such as ALLA are certified by STAHL CraneSystems as official crane building partners and receive especially intensive support. The modular construction of STAHL CraneSystems' hoists and crane components enables crane systems to be adapted specifically to requirements, so that high-quality, technically mature crane technology is always utilised even for demanding projects.

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ALLA off-standard crane with STAHL CraneSystems technology: the crab is equipped with a 180 t SW winch and a 25 t SH wire rope hoist. Underneath the crane bridge is a movable cantilever beam with an additional 12.5 t auxiliary hoist.

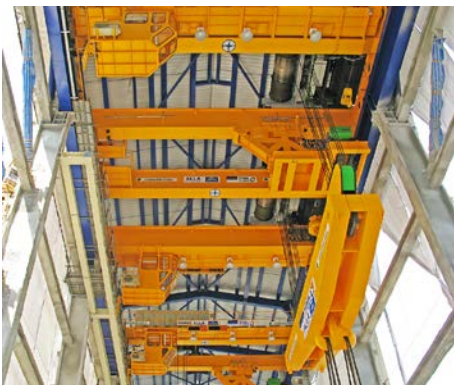
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Heavy load: two of the cranes are switched to tandem operation to lift the generators, an off-standard lifting beam is used to take up the load.



These SIEMENS turbines, weighing over 300 tonnes, are positioned with millimetre accuracy with the aid of STAHL CraneSystems' winches with their precise controls.



Three double girder overhead travelling cranes assist in erection work and will later be used for maintenance of the system.

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The cranes were already put to work during the construction of the power station.