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From Künzelsau to Tatarstan

Hoists from STAHL CraneSystems in the world's third-largest fertiliser factory

At Mendeleyevsk in the Russian Republic of Tatarstan, 1,000 kilometres east of Moscow, the new OAO industrial complex "Ammonium" was inaugurated in early 2016. The chemical plant produces urea, ammonium nitrate and nitrogen fertiliser for industrial agriculture as well as methanol as a raw material for the petrochemical industry. Companies from Russia, Japan and China were involved in the design and construction of the plant. The crane technology for maintenance of the plant stems from STAHL CraneSystems in Künzelsau.

Not everyone immediately thinks of food when talking of energy from natural gas. Methane, however, is not only used as a fuel gas, but is also an important raw material for the synthetic production of ammonia – from which, in turn, most fertilisers are made. Without them, a large part of today's world population could not be fed. Russia, next to the USA, has the largest gas deposits worldwide and a growing interest in diverse exploitation of its natural resources. It was therefore decided in 2010 to build the third-largest fertiliser plant in the world – the largest construction project of its kind in Russia for 20 years. The plant has the capacity to manufacture 717,000 t of ammonia, 717,000 t of urea, 238,000 t of methanol and 300,000 t of ammonium nitrate per year, which makes up around 5% of the Russian fertiliser market.

To ensure smooth operation of the plant, there are a total of 11 cranes, 6 electric wire rope hoists and 30 manual chain hoists from STAHL CraneSystems in use. Together with the experienced engineers and specialists from the department International Projects (IP) at STAHL CraneSystems, the certified partner of STAHL CraneSystems – Elektrotjazhkran in St. Petersburg – found a technically and economically viable solution, thereby prevailing over Russian, Bulgarian and German competitors. Elektrotjazhkran's brief covered the engineering, procurement and construction (EPC). The contract was signed at the beginning of 2013, and the cranes and hoists delivered at the end of 2013. "Since the plant was to be installed in Russia, the requirements for the technical documentation were

very high. We already started sending drawings, assembly plans and many other information and certificates to the responsible engineering company for approval soon after the contract was signed. Particularly when it came to the necessary certification for Russia, we maintained close contact with our colleagues in Russia," says Thomas Wöhrle, project manager in the IP department at STAHL CraneSystems. "We have experience as EPC contractors in the processing of international projects and the related national and international requirements. We were able to make full use of our know-how in this project and support our partner actively." As a result it was possible to deliver the crane technology on time and to the full satisfaction of the end customer.

Apart from the requirements of the business side of the international project, the demands on the technology itself were also very high: the aggressive ammonia atmosphere and the risk of explosion in some areas of the factory (Ex Zone II C T4) were decisive factors during the design of the hoists and crane components. The equipment was therefore coated with a special, zinc-bearing paint – the three-layer coating is a total of 240 µm thick. The cranes and hoists were implemented in part in explosion-proof design for Zone 1. In addition to this, the requirements of Russian standards had to be fulfilled, which were discussed with the companies concerned at a two-day clarification meeting in Moscow. The equipment was assembled and installed on site by the companies involved in the consortium with the support of Elektrotjazhkran as supervisor.

After a construction period of five years, OAO "Ammonium" announced the commissioning of the plant. A second expansion stage is apparently already being planned.

Characters: 4,150

Photos:

Production of the crane bridges at our certified crane building partner in southern Germany.

Pressemitteilung | Press Release

At Mendeleyevsk in the Russian Republic of Tatarstan, 1,000 km east of Moscow, the new OAO industrial complex "Ammonium" was inaugurated and the bridge cranes commissioned in early 2016.

To ensure smooth operation of the plant, there are a total of 11 cranes,
6 electric wire rope hoists and 30 manual chain hoists from STAHL CraneSystems in use.

Single girder overhead travelling crane in the third-largest fertiliser factory in the world.

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The cranes and hoists were assembled before completion of the hall roofs to facilitate the work.

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