Partner of Experts

Presseartikel | Press Article

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Setting new standards

STAHL CraneSystems' partner SMI tech builds explosion-protected tandem crane with radio remote control, complying with new crane standards DIN EN 13001 / DIN EN 15011.

Designing crane systems for hazardous areas is a challenging task. Pipeline network operator Gasunie was looking for a customised explosion-protected crane with two electric wire rope hoists controlled in tandem. The system was to be radio-controlled and designed in accordance with the latest crane standards DIN EN 13001 and DIN EN 15011. Crane company SMI tech from Hannover accepted this challenge, supported by STAHL CraneSystems, market leader for explosion-protected hoists and crane components.

Gasunie is a Dutch gas transport company with natural gas pipelines in the Netherlands and North Germany. Its subsidiary "Gasunie Deutschland" with its 3,600 km network of high-pressure pipelines plays a significant role in the gas hub between North Germany and Northern Europe.
Gasunie maintains eight compressor stations in Germany at intervals of 120 to 150 kilometres, needed to equalise pressure lost during the transport of the gas. The core of this network is the compressor station in Embsen near Bremen which is particularly important due to its central location. By the end of 2014, Gasunie will have extended the plant, which has existed since 1973, by a new metering and control station and more compressor stations. Natural gas arriving in Germany from the North Stream Baltic pipeline and the new NEL Northern European pipeline will be piped into the Gasunie network through it. It is essential for the consistency and density of the incoming gas to be tested, this will take place in the metering and control station currently under construction.

Crane technology for hazardous areas

There's no explosive gas here yet, not even pipes can be seen in the small building. However the strictest safety regulations already apply here on the construction site of the metering and control station near Bremen. Here no-one works without protective equipment, flame-retardant clothing or without undergoing detailed safety briefings. The first tests with natural gas will take place here in a few months' time before the station is commissioned at the end of the year. Once there is gas in the pipes, explosion protection Zone 1 will be in force for this area. This includes the crane technology with the aid fo which the metering and control equipment will be installed and later serviced. There are both electrical and non-electrical components in crane technology which could cause an explosion in an explosive environment. For this reason STAHL CraneSystems produces equipment specially designed for use in areas subject to gas or dust explosions. All hoists and crane components without exception come from the company's production plant in Künzelsau, South Germany. They comply with the latest European (ATEX) and international (IECEx) construction and safety regulations for explosive areas. As a leading manufacturer of explosion-protected hoists and crane components, STAHL CraneSystems was the just the right supplier for Gasunie. The crane system was designed, built and erected by SMI tech in Hannover, who were also responsible for calculating the crane runways and supplying and erecting other explosion-protected manual chain hoists with curved runways. STAHL CraneSystems' experienced crane building partner was once again able to showcase its expertise in complete, ready-for-use systems in hazardous areas.

High requirements

As a Dutch state-owned enterprise, Gasunie by its own account aspires to the highest standards in the fields of safety, reliability, efficiency and sustainability. The company demanded equally high standards from SMI tech's crane system. Gasunie specified design in accordance with the new crane standards introduced in Germany in September 2012, which have however been requested by very few customers up to now. "Our customised Ex crane is a radio-controlled suspension crane with two explosion-protected wire rope hoists which can be operated individually or in tandem as required," Bernhard Pecho, Managing Director of SMI tech, explains the distinctive features of this project. "SMI tech is setting new standards with this crane," is the opinion of Jens Panzner too, who as STAHL CraneSystems sales engineer assisted SMI tech to implement the project. "Wireless controls for crane systems in hazardous areas have been rare up to now. And there are not many manufacturers able to design a tandem crane for hazardous areas in compliance with the current standards of the EC Machinery Directive."

The SH 40 ex electric wire rope hoists from STAHL CraneSystems are designed for maximum working loads of 3.2 t. They were successfully passed the acceptance test at the end of February 2014 and commissioned in cooperation with Gasunie personnel. In the coming weeks they will help to install the metering and control apparatus in the building. Once the plant has been commissioned they will be used for maintenance work on the pumps.

Experience in explosion protection

SMI tech and STAHL CraneSystems completed a comparable project in another North German compressor station in the autumn of 2013. Other projects could follow. Bernhard Pecho explains that he appreciates having STAHL CraneSystems as a well-known explosion protection expert at his side and adds: “With our experience in crane building and STAHL CraneSystems’ field-proven crane technology we can produce standard and off-standard cranes to the highest standards. There are always plenty of interesting opportunities for us, particularly in the field of explosion protection.”

Photo material (lead photos):

SH 40 ex explosion-protected electric wire rope hoists, designed for tandem operation.

There’s no explosive gas here yet: the customised crane on the construction site of the metering and control station is tested with 125 % of the permissible rated load of 6.4 t.

Photo material (additional / detail photos):

Explosion-protected wire rope hoists from STAHL CraneSystems meet the strict ATEX and IECEx requirements.

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STAHL CraneSystems supplied all the crane technology:
explosion-protected wire rope hoists ...

... suspension crane endcarriages with explosion-protected travel motors ...

... and the crane control and radio receiver with flameproof enclosures.

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