The radar level transmitter VEGAPULS 64 delivers reliable measurement under fluctuating process conditions

At the Dusslingen production site, near Tübingen, 50,000 tons of special chemicals are manufactured each year for the B2B market. In one area of production, high-viscosity products are produced in multiple mixing systems. Three motors, each with up to 160 kW output and 1,000 revolutions per minute, are in each of these vessels to ensure that the contents are effectively mixed. During processing, the multi-stage agitators must always be completely submerged in the liquid. This is because with motors of this power, vibration and resonance oscillations could otherwise occur, ultimately damaging the shaft or the entire mixing unit. But how can one always be sure that the agitators in these up to 8m high and 2m diameter tanks are covered with liquid? After all, not only do the process conditions vary considerably day to day, the product properties like density or viscosity can too.

Previously, to prevent the agitators from running continuously or causing resonance oscillations, the system operators ran the mixers with extreme caution and checked the level in the tanks again and again by hand. In a first attempt at a solution, CHT installed load cells under the mixing tanks. However, this proved not to be an ideal solution for various reasons, but mainly because the products have different densities and the tank has a cooling/heating jacket. Sometimes this jacket is only filled with steam, so it weighs hardly anything. Another problem: Previously, the tanks were all on one level and an Ex zone was set up around them. Now, however, the tanks are housed in a different building and extend over several floors. When load cells are used, the tanks must be mechanically decoupled from the walls. This would then require the Ex zone to extend over several floors. This means that the entire building would have to be designed in compliance with ATEX directives – at enormous cost.

VEGA Australia Pty Ltd
34 Cawarra Road
2229 CARINGBAH, NSW Australia
Tel.: 1800817135
Fax: +61 2 95426665
info.au@vega.com
www.vega.com

There is a change of products practically every day in CHT's production plant at Dusslingen.

Almost every one of CHT's approximately 6,000 products is tailor-made for the customer. To be able to supply its customers on time and above all with consistently high quality, the company has to operate its production very efficiently and make every step in the process reproducible. For this reason, a process control solution was transported from the manufacturing industry to the **chemical industry** , taking into account the special requirements of the chemical sector.

The task was to integrate a level measuring system whose measuring results would directly control the power output of the agitator motors. However, a level measurement was not required for the purpose of inventory measurement or metering, because CHT does this via weighing the raw materials. This is necessary to protect the manufacturing plant equipment.

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And it came on the market at just the right time. This non-contact radar level measuring instrument is characterized by extremely strong focusing and high dynamics. As a result, it measures very reliably despite build up deposits, foam, vessel internals and density fluctuations.

All in all, CHT's collaboration with VEGA went very well, even though VEGA service technicians did have to optimize and make a lot of adjustments at the beginning before they obtained a stable measurement. In all, it took less than two weeks for the radar level transmitter to be installed, precise measuring results to be output and the data to be integrated into the APROL system.

Now, the sensor can measure and follow the level perfectly even when the agitators are switched on.

The radar level transmitter VEGAPULS 64 measures the levels in the production equipment with reliability and accuracy.

VEGAPULS 64

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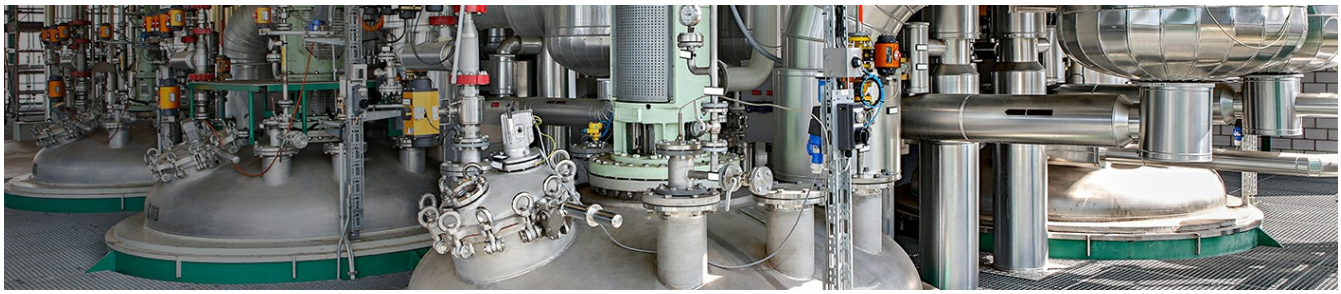

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