



# SIEMENS

## PROCESS INSTRUMENTATION

# SITRANS LR250 with encapsulated antenna

For corrosive chemical storage applications

[www.usa.siemens.com/level](http://www.usa.siemens.com/level)

Pulling up to a gas station, you're thinking about the rainy weather, the errands you need to run, the traffic on the highway – probably not thinking about the additives in the gasoline flowing into your tank. But operators at a US oil field services company definitely are.

The special chemical division of one of the largest oil field services in the world, produces a variety of chemicals used to improve the viscosity of fluids and additives for crude oil and finished fuels.

Siemens SITRANS LR250 with its antenna helps this service company along the production process. Providing level measurement in the company's chemical storage tanks,

### **The importance of being reliable and accurate**

The company is located in a major center for the US's chemical industry. More than 30,000 citizens call it home, as do birds, raccoons, and rattlesnakes in a nearby wildlife preserve.

In short? This company cannot take the chance of any product spills, especially with the highly corrosive chemicals stored in the company's new 21-foot tanks.

Knowing the level of chemicals at all times is critical due to the active production at the plant. If chemical inventory runs low, production could be slowed or even stopped, wasting both time and money.

Operators also need to know how much material is in the tank to prevent overfilling. Previously, the company had tried guided wave radar, but this technology did not provide consistently reliable readings. Operators had discussed using pressure transmitters in this application, but since the density of some of the chemicals used in the mixture in the tank varies from time to time, pressure transmitters could have caused some unwanted level variances.

### **Putting the SITRANS LR250 to the test**

The company was excited to try Siemens' SITRANS LR250 with a flanged encapsulated antenna. Unlike pressure transmitters, this non-contacting radar technology is not affected by changing material



*Installing the SITRANS LR250 was very easy on one of the chemical storage tank's existing process connections.*



*Droplets of chemical form over time on the transmitter's lens, but did not affect the SITRANS LR250's performance in any way.*

density. Plus, it does not suffer from the reliability problems the company found with guided wave radar.

The plant manager decided to test this antenna on a tank that was fitted with an older radar device. The tank chosen for the radar device has various ports, which made installation of the SITRANS LR250 possible and at the same time allowed for a performance comparison between the two radar transmitters.

The SITRANS LR250 operates at 25 GHz. This higher frequency yields a higher signal to noise ratio than radar devices operating at a lower frequency. The resulting narrow signal makes it easy to install the non-contacting radar transmitter practically anywhere on top of the tank, since interference from long nozzles or tank wall is minimal.

#### **Non-contacting success for corrosives**

The SITRANS LR250 performed flawlessly on this storage vessel over several seasons. The narrow echo beam revealed ample signal strength in relation to the baseline. Regardless of the conditions

in the tank either with a high or lower level, the echo profiles taken during the evaluation period and the trends collected by the customer show that the SITRANS LR250 consistently tracked the material levels accurately.

The flanged antenna proved to be a device that was dependable for level measurement of highly corrosive chemicals. This antenna configuration completely isolates the process from the radar transmitter itself. This corrosive application was easily solved – without the need to use expensive exotic materials typically associated with this type of application.

Accurate level measurement with this transmitter and its antenna from Siemens means no worries for the area's citizens, its wildlife, or chemical companies such as this one.



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