



SITRANS LR250

## Level measurement of corrosive materials with new radar antenna



A midstream gathering and processing gas company in the Southern United States processes, treats, and compresses natural gas from a formation rich in hydrocarbons, liquids, hydrogen sulfide, nitrogen, and CO<sub>2</sub>.

The company focuses on helping producers to bring their product to market quickly and effectively. At the condensate and stabilization facility, the company depends on level measurement from Siemens to remove impurities from the gas stream and provide stabilized products.

### Challenge

A waste tank at the company's condensate stabilization and treating facility

receives various unwanted components generated during the gas treatment process. A difficult application for level measurement, as the material that enters the tank is highly corrosive. As one operator says, "That material eats through whatever you try to install for monitoring levels in the tank."

This "sour water" is made of caustic, condensate and other waste products that make it not only corrosive to most instrumentation, but also dangerous to operators.

There is a potential for high levels of hydrogen sulfide (H<sub>2</sub>S) in the tank or in the area. Exposure to high level of this gas can be fatal. Once the level is about



Installing the SITRANS LR250 was easy and the company now has reliable, high-performance continuous level measurements on their process vessel.



The corrosive and aggressive materials inside the process vessel did not affect the SITRANS LR250's performance in any way.

two thirds full, trucks carry away the waste product for proper disposal.

As part of the treatment and stabilization process at this facility, the production of corrosive waste material is unavoidable. It is important to the company to know what the waste product level is in order to dispose of it in timely and effective way. Calling out trucks to come to collect product while the level in the tanks are not high enough results in a waste of time and money. At the same time, not disposing the waste in a timely manner could result in unwanted material spills.

### Solution

Knowing the correct material level in the tanks at any given time is important in order to handle it properly. Operators carry H<sub>2</sub>S gas detectors in the area where these tanks are located. For safety reasons, however, it was customary for two people to verify the level in the tank. Due to the corrosiveness of the material, the tank is fitted with an external measurement indicator or sight glass to provide the current level indication.

The SITRANS LR250 radar transmitter with a six-inch flanged encapsulated antenna was installed on top of the tank on a three-inch (7.6-centimeter) standpipe. The flanged encapsulated antenna lens of the radar transmitter sealed the process connection. Consequently, the lens isolated the transmitter from all wetted parts in the process.

Initially, the customer used the 4-20 mA output of the radar transmitter to interconnect it to a SITRANS RD100 remote digital display. The digital display was placed next to the sight glass so operators could compare the level readings from the radar transmitter to the one observed

through the sight glass. After a short period, the customer was convinced that the SITRANS LR250 was reliable. The SITRANS LR250 was then re-wired, bypassing the digital remote display and instead routing the loop-powered signal to a control panel and from there to the control room.

### Benefits

There is no need to send any operators to visually check the level of corrosive materials in the tank via the sight glass. The SITRANS LR250 has been providing reliable level measurements for almost a year. Furthermore, echo profiles were taken about every quarter to make sure there was not signal degradation due to buildup or condensation. The echo profile indicated a flawless performance.

These days, the customer solely relies on the SITRANS LR250 to measure the level in the tank and schedule material pickup accordingly.

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