



Multi-Point Level Monitoring in Waste Processing Application



Multi-point radar level system provides essential information for waste processor

A multi-point high-accuracy TDR radar level measurement system installed by **Hycontrol** is playing important safety and logistical roles on the tank farm of a waste processing company in northern England.

There are ten tanks on site, all 12 metres high, used to store waste oil, oil contaminated aqueous solutions and anti-freeze prior to reprocessing. Product is constantly being transferred to and from the tanks, so accurate continuous level measurement is vitally important.

Three of the tanks already had Hycontrol's microwave based TDR units installed and these were providing reliable and accurate level measuring to +/- 5 mm. The customer wanted to upgrade the site to include level measurement on the remaining tanks and their engineers had clear objectives of what they wanted to achieve from the new system. Firstly, they wanted reliable and accurate contents measurement of all the tanks using a level technology that would be unaffected by vapours and temperature changes, whilst having a proven track record in the oil recovery industry. Secondly, with safety and environmental pollution considerations of paramount importance, they wanted an alarm system that would prevent over-filling. Finally, they wanted a central display panel simultaneously showing the levels in all the tanks, with data retransmission to a central location on the site.

Hycontrol has over 30 years' experience in designing and installing bespoke level measuring systems for use in all industry sectors. Their proposal was to install a further seven VF Series TDR radar units, with all ten instruments connected back to a ten point display and alarm panel. The display panel incorporated ten separate six digit LED displays with 4-20 mA outputs for signal retransmission. The alarm panel provides an amber flashing beacon and audible alarm to prevent overfilling. Given the ongoing performance of the existing TDR units on site and Hycontrol's experience, the customer was confident that the proposed system would provide exactly what they required.





The new VF Series TDRs, which have 12 metre long, 4mm diameter stainless steel cable probes, have been fitted directly into the top of the tanks using their 1" BSP connections. The full system was installed and commissioned by Hycontrol engineers. Their ability to provide specialist engineered control and alarm panels sets them apart from most of their competitors. Systems are based on proven level measuring technologies chosen to provide optimum performance and reliability.

Hycontrol's northern England sales representative **Nick Reece** notes: "The Hycontrol sensors were fitted with minimum disruption to ongoing operations and the customer reports the system is working very well. They now have a clear view of all their tank contents, allowing them to control the filling and emptying processes whilst monitoring our stock levels across the site. The alarm system gives added security and prevents overfilling taking place."

Footnote:

Hycontrol's Reflex VF Series range of TDR products is ideal for this type of application and can be used for the measurement of liquids, powders and granules. The technology, originally used to detect breaks in subsea cables, uses pulses of low power microwaves sent along the conducting probes. At the point where the waves meet the air-product interface, they are reflected by the product back along the probe. The measured time between emission and reception back at the sensor head is proportional to the distance. This information is then converted to the level in the tank.

The measuring principle is unaffected by pressure, temperature, viscosity, vacuum, foam, dust, product build-up or changes in dielectric constant. The probes, which are durable and highly reliable, allow a very narrow measuring profile up to a maximum range of 24 metres. This is particularly useful for measurements in tanks which have internal structural supports.

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