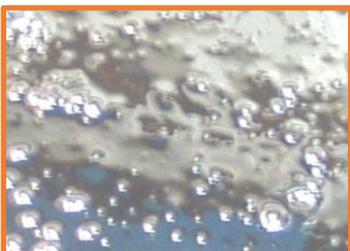


HYCONTROL

LEVEL MEASUREMENT SOLUTIONS



Corrosive Chemical Level Monitoring Application



F2 Chemicals Ltd



Hycontrol successfully solve highly corrosive level measurement problem



Specialist VG7 radar level instrumentation, supplied by **Hycontrol Ltd**, is providing important measurement and control data in a highly corrosive liquid level application at **F2 Chemicals'** plant in Preston*.

The drop antenna version of the VG7 has been installed to accurately measure and monitor the level of highly corrosive, dilute hydrofluoric acid, stored in a 3200-litre polypropylene holding tank.

Previously, F2 Chemicals had experienced measurement problems on this tank with an older cone-type antenna radar instrument installed by a competing instrument manufacturer. The radar had failed on a number of occasions due to the adhesive build-up of vapour-borne contaminants on the cone. These problems caused inaccurate and intermittent level readings, requiring the regular removal of the old instrument for cleaning and re-calibration. This was a very hazardous procedure and the work involved the emptying of the tank, with subsequent costly process downtime.

F2 Chemicals already have an established working partnership with Hycontrol and have a number of the company's level measuring instrumentation operating successfully in other parts of the site. As a result they asked Hycontrol for advice on how to resolve this tricky application. The selection of the VG7 instrument was made after detailed discussions, during which careful consideration was given to both the process application itself and the chemical resistive properties of the VG7's PTFE drop antenna.

The VG7 instrument, installed by F2 Chemicals' engineers, has been fitted to a flanged coupling on the top of the tank and is connected to the plant's control system to give constant live level readings which are required for process monitoring. Hycontrol commissioned the instrument and programmed it to match the reflective properties of the process liquid in order to optimise accuracy and reliability.

The VG7 Series of two wire FMCW (Frequency Modulated Continuous Wave) radar products are the most advanced in the



Hycontrol range of radar technology products and provide exceptional levels of accuracy over a maximum range of 80 metres.



The VG7 technology is ideal for use with wide and diverse range of liquid products, utilising either the Horn or Drop Antenna versions**. A distinct advantage is that the instrument is unaffected by changes in dielectric constant, pressure, temperature or viscosity and can operate in vacuum, foam and dust. The FMCW radar uses a high frequency (26 GHz) signal, which increases in frequency during the measurement. The emitted signal is reflected back from the product surface and received after a time delay. Further signal processing of the difference between transmit and receive frequencies provides a signal directly proportional to the level.

F2 Chemical's senior electrical and instrument engineer **David Johnson** is very pleased with the installation: "Reliable and accurate level measurement is essential for such corrosive applications. The VG7 instrument has now been installed for over eight months and we have not experienced any problems. We worked closely with Hycontrol engineers during the installation and over the years have found the company to be a very professional process equipment and service provider."

***F2 Chemicals Ltd**

F2 Chemicals Ltd was established in 1992 as BNFL Fluorochemicals Ltd, a diversification business belonging to British Nuclear Fuels plc (BNFL) to develop a chemical business based on BNFL's fluorine generation expertise. Following collaboration work with Durham University, the company developed its selective direct fluorination technology for the production of organic compounds. The core business is the manufacture of high specification Flutec® Fluids (perfluorocarbons). The company was acquired by Showa Denko KK In September 2008.

****VG7**

For process vessels with complex internal structures such as pipes, heating coils or agitators/stirrers, the optional ETS (Empty Tank Spectrum) software is required. ETS effectively maps out all unwanted signals by viewing the tank empty and memorising all the return signals from internal structures such as pipes, heating coils and agitators. The VG7 Radar will then only monitor the moving liquid levels and ignore the static objects based on data from the empty tank spectrum.

To read more of our applications in the chemical, food & beverage, nuclear, water & waste, recycling, quarrying and metals industries, please go online at hycontrol.com

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