



Endress+Hauser Levelflex Guided Radar in Activated Sludge Reactor accurate & reliable liquid level measurement despite the presence of a thick foam layer

In February 2005 the North Shore City Council commissioned a new activated sludge reactor surface wasting system, designed by Sinclair Knight Merz, consultants at their Rosedale Wastewater Treatment Plant.

The purpose of the activated sludge reactor (MLE configuration) surface wasting system is to preferentially remove floating surfactants and hydrophobic filamentous micro-organisms that are brought to the surface of the reactors under aeration.

Previously, when the surplus activated sludge was removed from below the surface, the Rosedale WWTP frequently experienced a significant accumulation of surfactants and hydrophobic organisms on the surface of the reactors which resulted in a thick and potentially odorous scum layer.



Levelflex FMP40 installed at NSCC - WWTP

The new system removes the surplus activated sludge from the surface near the final reaeration zone of the 3 reactors using a pneumatically operated weir penstock that is controlled so as to maintain a set distance between the liquid surface and the top of the weir (currently 150mm) during variations in the liquid level.

This ensures that unwanted surfactants and hydrophobic organisms are rapidly and preferentially removed from the surface. This also minimises the growth of these unwanted organisms.

An Endress+Hauser FMP40 Levelflex Guided Radar was selected to reliably measure the liquid level in the reactors which is recorded as a rolling average and used to control a constant differential between the weir and the surface.

Accuracy Important

The maintenance of an accurate differential is important so that wasting is from near the surface layer otherwise scum prevention will be unsuccessful.

Since commissioning the accumulated scum layer has gradually decreased to a stage where in mid April 2005 it is no longer present.

Paul Bickers (Process Controller at the North Shore City Council WWTP) comments that the Levelflex FMP40 Guided Radars are performing well.

More information?

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Levelflex M FMP40

The Levelflex M FMP40 performs continuous level measurement of liquids and powdery to granular bulk solids.

Three types of probe are available with threaded process connections from 3/4" and flanges from DN40:

- Rod probes, for liquids
- Coax probes, for low dielectric liquids e.g. LPG
- Rope probes, for solids up to 35m

The following interfaces are available:

- HART (standard), 4-20mA
- PROFIBUS PA
- Foundation Fieldbus

Benefits

- Measurement is independent of Density, Temperature and Dust
- Measurement is possible with surface foam
- Simple, menu-guided on-site operation with 4-line text display
- On-site envelope curve on the display for easy diagnosis
- Easy operation, diagnosis and measuring point documentation with ToF Tool software (supplied)
- Optional remote display & operation
- With coax probes measurement is independent of tank internals and nozzle installation
- Replaceable rod and rope probes
- Application in safety related systems with requirements for functional safety up to SIL 2