

Garbage Incineration Plant Reduces Operations and Maintenance Costs with Advanced Guided Wave Radar

RESULTS

- Decreased operations costs
- Reduced maintenance costs
- Eliminated risk of unplanned shutdown

APPLICATION

Level measurement of a combustion salt silo

CUSTOMER

Garbage Incineration Plant in Europe

CHALLENGE

A garbage incineration plant had difficulty monitoring their combustion salt silo. The plant trash incineration process produces a contaminated salt that gets stored in a large silo. When the silo is completely full, it is transported to another storage plant by truck. In order to optimize truck schedules, the silo should only be emptied if it is completely filled. Additionally, it must never be overfilled.

Previously, this customer had tried a non-Emerson guided wave radar, but the low reflectivity of combustion salts (DC less than 2) did not return a strong enough surface to measure reliably. In fact, the transmitter did not return any signal in the bottom half of the silo.

Without a reliable method to monitor the level of the combustion salt silo, this plant risked overfilling the silo which would result in an unplanned shutdown and high maintenance costs. In addition, waste costs were increased due to scheduling waste removal before it was needed.

SOLUTION

To solve this measurement problem, the customer installed a Rosemount 5303 Guided Wave Radar with flexible single lead probe (Figure 2). The transmitter electronics utilize a unique Probe End Projection (PEP) function that tracks the surface even when the surface signal is too weak to detect using traditional measurement methods. Since the signal was noisy, they decided to use the PEP function for the entire measuring range (Figure 3). Direct Switch Technology provides a stronger signal that enabled the PEP function to work for long distances.



This garbage incineration plant eliminated silo overfills and minimized the risk of unplanned shutdown.



Figure 1. 60-ft (18.5 m) tall combustion salt silo at garbage incineration plant.

POWER

This garbage incineration plant achieved many positive business results from the use of the Rosemount 5303 Guided Wave Radar level measurement. Overfills were prevented thus eliminating costly clean-up operations. In addition, the reliable level measurement reduced waste disposal costs by allowing for optimal scheduling of combustion salt removal trucks. Finally, reliable level measurement minimized the risk of unplanned shutdown.

RESOURCES

Emerson Process Management Power Industry

<http://www.emersonprocess.com/solutions/power/>

Rosemount 5300 Series Guided Wave Radar

<http://www.emersonprocess.com/rosemount/products/level/m5300b.html>



Figure 2. Installation of Rosemount 5303 Guided Wave Radar.

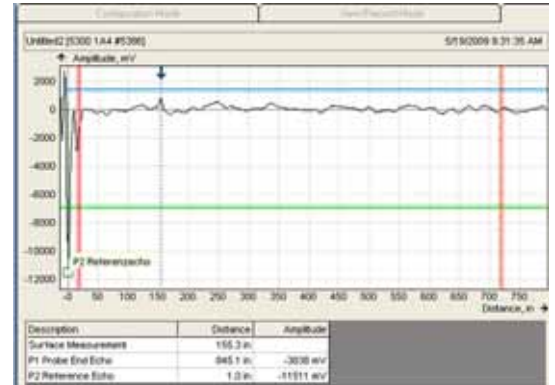


Figure 3. In cases of weak surface signal, Probe End Projection uses the probe length and the dielectric of the material to determine the product surface.

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