Stopford Projects Ltd., Achieves Consistent End-Product Quality with Multipoint Application and Industry Solution (AIS) Temperature Sensors

RESULTS

- Consistent quality of end-product
- Increase energy efficiency
- Reduce safety risk

Application and Industry Solutions (AIS) temperature sensor met all requirements which resulted in more efficient and safer operation of the waste treatment system.

APPLICATION

Temperature measurement of an on-site thermal desorption system

APPLICATION CHARACTERISTICS

Multipoint temperature measurements at different heights with single process entry

CUSTOMER

Stopford Projects Ltd., United Kingdom

CHALLENGE

The Matrix Constituent Separator (MCS™) is a safe, low-cost, on-site desorption process that turns contaminated waste to inert solids and provides recovery of hydrocarbons. The instrument engineer of this engineering design and project management company was having difficulty in identifying the trend of the batch process and optimizing the batch control.

The system had no equipment to measure the temperature of the batch it is processing. Adjustments in the batch process to meet the desired end-product quality were made manually and didn't necessarily provide the desired result.

The uncertainty in temperature of each batch resulted in varying quality of decontamination leading to inefficient energy usage due to excessively high temperatures during decontamination. Furthermore, if the temperature of the thermal desorption process goes beyond a certain point, a fire could occur leading to costly equipment damage and safety risk to the operator. If the temperature is too low, the waste may not break down enough for safe inert landfill.

Figure 1. Installed Rosemount Multipoint Application and Industry Solution (AIS) sensor

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Rosemount Multipoint Temperature Sensors with four temperature points within one insert have been installed at designated lengths. These sensors are directly wired to the process and a PLC receives and records the temperature measurement and activates an alarm in case of high temperature. Rosemount Multipoint Temperature Sensors have compact design and can be replaced on-site for easy maintenance. In addition, Rosemount's vast experience in temperature solutions ensured the right sensors were selected for the application.

By installing the multipoint sensors, they are able to record the batch trend and optimize batch control, thereby increasing efficiency of the process. This further resulted to consistency in end-product quality, recovering 99% of hydrocarbons and meeting the hazardous landfill legislation by breaking down the waste to landfill safe soil. Finally, a high temperature alarm enables a shut down of the process if temperatures exceed preset levels, ensuring safe operation.

Figure 2. Rosemount Multipoint sensors

Emerson Process Management Water & Wastewater Industry
http://www.emersonprocess.com/solutions/water/

Rosemount Application and Industry Solution Sensors
http://www2.emersonprocess.com/en-US/brands/rosemount/Temperature/AIS-Sensors/Pages/index.aspx

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