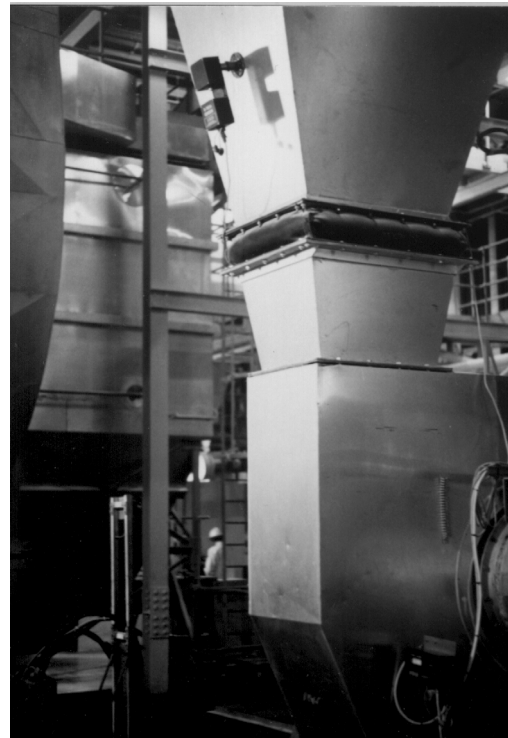


Food Processes & Emissions Monitoring

- Industry:** Food (drying)
- Company:** ABR Foods
- Issues Covered:**
- ABR's environmental policy to monitor emissions
 - Detecting filter failure
 - Monitor unaffected by sticky particulate
 - Reliable operation in vibrating environment
 - Anticipation of filter problems

ABR Foods Ltd a major manufacturer of starch and gluten in Corby wished to monitor particulate emissions from the gluten dryer to provide an instant indication of filter problems. This was to back up existing detection procedures and to enable an operator to take action to avoid environmental emissions, and was implemented as a result of ABR's strong company environmental policy. The installation of PCME's DT monitor in the emission duct has proven a satisfactory solution.

ABR in the gluten manufacturing process, pass the gluten into a large dryer. The dried gluten is filtered from the air by a large reverse jet type filter unit. ABR wished to monitor the particulate emissions from this arrestment plant to avoid the possibility of environmental emissions resulting from a filter rupture remaining undetected. It was hoped an appropriate monitor would also facilitate the anticipation of filter failure by indicating deteriorating emission levels.



Sensor monitoring emissions from Gluten Dust Collector

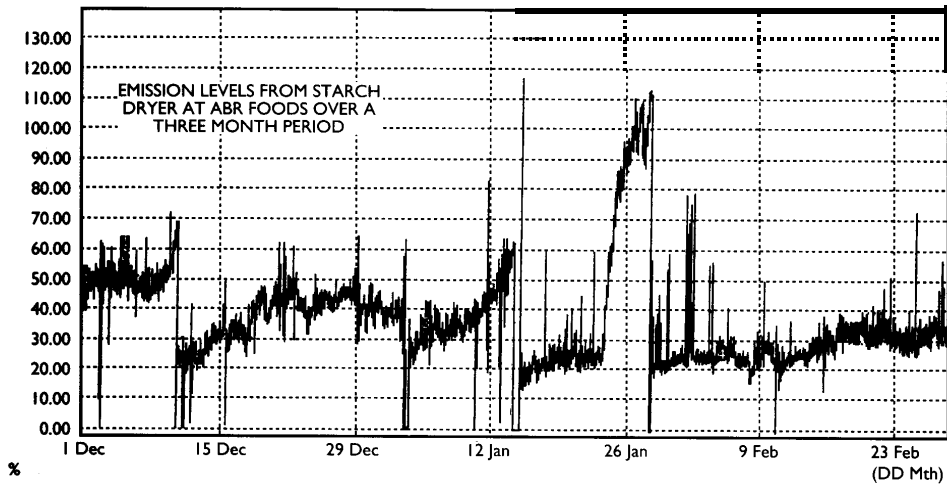
The Process Engineering and Environmental Department were naturally concerned that the dust monitor would work reliably in the harsh environment of the dust collector exhaust, due to the vibration, temperatures in excess of 100°C and the sticky nature of the particulate.

A PCME DT series monitor was installed in the dust collector outlet. The DT is an Electrodynamic® type dust monitor, which works on the principle of monitoring the small but repeatable electrical signal produced when particles interact with a sensing rod protruding into the dust collector exhaust. The DT sensor was installed by a single 1½" BSP coupling, which facilitated installation in the diverging duct work following the dust collector.

The 4-20mA output from the DT monitor, proportional to dust concentrations was sent 50m away to the Control Room. Alarms are set to activate when emissions exceed preset limits. Data downloaded from the DT monitor to a PC gives monthly reports via EPA software which is used to graphically display and analyse the record emissions.

ABR have found the DT system to have proved itself to be a reliable and effective system for monitoring emissions. The DT probe has not required cleaning since installation. The system has tracked emissions and it is therefore possible that the system will track the slow deterioration of a filter, hence enabling remedial maintenance.

ABR's Environmental Manager was pleased that the evaluation of the DT system was successful, since he was well aware of the difficulty in finding an alternative monitor for this application. Optical monitors could require substantial maintenance and less sophisticated triboelectric devices had not worked in similar applications at the same site. The DT monitoring system has been a satisfactory solution.



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