Corrosion Monitoring in Power Plant Flue Gas

A new parameter to optimize plant life:

- Corrosion rate measured in flue gas duct
- Online measurement
- Integrate with other measurements
- Identify periods of corrosion
- Correlate to load, temperature, humidity, fuel mix etc.
- Rugged probe, continuous 180 °C
- Complete system: probe, datalogger, data transmission and presentation

Why measure corrosion in flue gas?

Corrosion in a plant is highly dependent on fuel, operation and shutdown / start-up procedures.

Biofuels and waste in power industry poses challenges to materials.

The cause of corrosion cannot always be revealed by periodic inspection of corroded surfaces.

However, corrosion measured online enables coupling with operational events and every other measurement.

It helps the operator to identify and eliminate conditions that cause corrosion in the plant.

The Electrical Resistance corrosion rate is a physical online measurement.
Information sheet IS-35-00-UK

Location of ER probes in Power station

Stack

Booster Fan

Gas-gas heat exchanger (GAFO)

DeNOx

Electrofilter

Bypass

Induced draft fan

FGD

Waste water treatment plant

Array of ER corrosion rate probes

Corrosion rate measured on line in power plant

General info
Probe material for instance: St.37, Corten
Probe element thickness: 1000 µm
Typical detection limit: 0.25 µm
Probe temperature: continuous 180 °C
Dimensions: ø90x25 mm
System: Datalogger, communication, presentation

Published
Utilization of On-line Corrosion Monitoring in the Flue Gas Cleaning System,
M. Montgomery, L. Nielsen, M. Petersen
VGB, Chemistry in Power Plants, Linz, 2014 and NACE, Corrosion, Dallas, 2015

* Information within this sheet is subject to change without notice.