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PROMECON MECONTROL

We hereby submit our experience with and judgment about the PROMECON MECONTROL Coal measurement system which has been installed in our power station in the year 1998.

The power station Wilhelmshaven has an 820 MW coal fired boiler with 4 vertical spindle mills (MPS type) and 32 burners. The boiler is a front and rear wall fired unit and has been erected in 1972 by Deutsche Babcock.

Evaluation of Technologies:

In the year 1998 EON at their power station Wilhelmshaven conducted comparism between various technologies for measuring pulverized coal flow in the burner pipes.

Amongst the technologies were:

a) electrostatic measurement devices
b) automated extractive devices
c) microwave measurement devices

Although the stations primary interest was not in the absolute mass flow signal but rather in the coal mass flow distribution one of our main criteria was the proof whether the tested systems were able to measure an absolute mass flow signal. In our opin-

ion the relative flow indication always needs an absolute measurement as a basis, because the distribution of the coal mass flows is nothing else than the ratio between the absolute mass flows of the pipes.

After a test period of several months the station decided to purchase the PROMECON MECONTROL system mainly because it was the only device that proved to be capable of measuring absolute coal mass flow without using any feeder signal.

It showed that the other technologies did not follow the feeder signal, especially not when primary air settings and other mill parameters where changed. This made the station suspicious about the fact of how these other technologies were capable to measure a relative distribution.

The PROMECON system proved to measure without drift and could indicate absolute mass flows independent from any auxiliary feeder signal.

Application of the technology:

The station conducted a modification of the secondary air in order to trim the air flows accordingly to the coal mass flow distribution measured by the PROMECON system. During those tests it could be shown that the CO levels close to the boiler walls could be reduced by a factor of ten as well as a better O_2 balance on the back pass of the boiler could be achieved. Furthermore the balancing of the air according to the fuel flow measurement reduced the unburned carbon content of the fly ash from about 3% down to 2.5%.

The optimization potential of air trimming alone revealed an optimization potential of several hundred thousand Euros per annum.

Reliability:

The measurement system has been in service now for more than five years. The probes have proven to be very reliable and wear

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resistant. To date no probes had to be exchanged due to wear of coal dust.

We can recommend the PROMECON system as a reliable and credible solution for measuring coal mass flow distribution as well as absolute coal mass flow on line.

Dipl. Ing Hans-Joachim Urselmann
Technical Manager of the power station

Mit freundlichen Grüßen

E.ON Kraftwerke GmbH

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