

Compared with water and energy costs, chemicals are a minor expenditure only when you consider the real costs of poor water treatment do you begin to understand the true advantage of accurate boiler water quality control.

The real consequence of overdosing is the increase in boiler blowdown

Much better is to install automatic sampling and control systems. These ensure the minimum dosing rate is achieved. Surface blowdown of less than 2% is achievable. Not only does this minimise energy and water loss, but it also eliminates the need for skilled boiler operators to be tied up performing this tedious, daily task.

Why automate chemical dosing?

Installing a control system that takes the guesswork out of feedwater chemistry control will ensure that the boiler remains scale and corrosion free, offering remote monitoring and archiving of all measured values whilst negating the need for daily manual tests.

C4S AQ300 achieves this by sequentially sampling feedwater, individual boilers and condensate, measuring the pH, Conductivity, Oxygen content, Feedwater flow rate and temperature then automatically adjusting the chemical injection rates based on accurate, temperature compensated, measured values.

C4S AQ300 take up to 5 individual samples, control 5 dosing pumps and 3 blowdown valves to control between 1 & 3 boilers ranging from 2 Ton 7 Bar horizontal, fire tube boilers up to 100 Ton 100 Bar water tube boilers.

Automatic dosing in action

When an elite British car maker was looking to improve even further the efficiency of its steam generation it turned to contract energy management company Engie to help identify where efficiencies could be made to the boiler operation. The original boiler house relied on manual chemical dosing to the feedwater. Engie immediately identified this as an area where efficiencies could be made in terms of chemical consumption and heat loss as a result of over-dosing and excessive blowdown cycles. Ian Carder, project manager, of Engie approached Controls 4 Steam and invited them to put forward proposals for automating the feedwater chemical dosing and TDS monitoring.

In order to satisfy the requirements of a global carbon reduction policy by the car manufacturers parent company, the solution proposed by Controls 4 Steam would need to demonstrate an ability to improve overall boiler efficiency and lower fuel consumption leading to reduced emissions, while addressing the fundamental shortcomings of the existing manual dosing and the detrimental affect it has on TDS blowdown. The solution came in the form of C4S AQ300, a fully automated boiler feedwater monitoring and chemical dosing system. It scrutinises water quality to ensure chemical dosing is aligned to real-time water quality and the demands on the boiler. AQ300 comprises an integrated computer-controlled management system that removes the need to perform manual tests and mitigates the operator from deciding on the duration or frequency of blowdown.

Compared to average water consumption for the preceding six years before the installation of the AQ300, the car manufacturer has seen a reduction of almost 50 per cent, equating to approximately 9700m3 in two years. This, in turn, has meant a fall in energy consumption and water costs of some £47.5k in the same period.

Apart from the clear cost-saving benefits of retro-fitting C4S AQ300 packaged systems to existing boiler house installations, reductions in chemical usage and handling, the potential for remote monitoring, and reduced carbon emissions resulting from improved boiler efficiency and long-term reliability, all combine to make this a practical, affordable and proven means of upgrading plant to the highest performance standards which are required on unmanned sites.

How much are these systems?

The cost of systems are relatively low and are quickly recouped through energy and manpower savings. A typical payback on investment on an automatic system would be well within 12 months. Much less when purchased as part of a new boiler installation.

For further information please visit:

www.c4s.co.uk



Controls 4 Steam UK Limited Blackburn Rovers Business Centre
Ewood Park Blackburn Lancashire United Kingdom BB2 4JF

Tel: 01254 704632

E-mail: tech@controls4steam.co.uk

Web: controls4steam.co.uk