

coke gas treatment reduces underfire system corrosion and risks

challenge

The underfiring system of a Belgian Coke Plant was suffering from fouling, deposits from tar, naphthalene, salts and under deposit corrosion. The corrosion resulted in gas leaks, which created safety risks, air pollution and high-risk repair work.

These deposits reduced the gas flow in orifices and flexible connections to the ovens. This makes the operation of the ovens difficult. Frequent cleaning was needed to maintain oven performances. The cleaning is a high risk operation due to the nature of the coke gas. Specialized maintenance operators are needed for this job.

Due to corrosion in the transfer lines to the ovens, gas leaks occurred frequently. These leaks of highly combustible coke oven gas are not only a source of air pollution, but the repair work, under difficult and high-risk conditions, is expensive (see image below).



solution

On one side of a battery, SUEZ Water Technologies & Solutions started dosing Ferrameen* COG9016 at a concentration of 0.2 L / 10,000 Nm³. We installed retractable coupons in the treated line and also, as blank, in the untreated line.

A few days after starting the Ferrameen COG9016 dosing, a reduction in the fouling of the orifices and flexible piping was already noted. After one month the first series of coupons was taken out of the system for inspection. The untreated coupon (top image) was already heavily fouled and showed underdeposit corrosion. The treated coupon (bottom image) was clean and showed no deposits or corrosion.



results

The Ferrameen COG9016 treatment reduced the maintenance cost by 30.000 €/y, minimized safety risks, and increased production by 1.3%. The environment benefited by the elimination of pollution through the gas leaks.

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