



Aqua Unique
Overholmvej 8 B
DK-8722 Hedensted

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A solution of limescale problems in heat exchangers (coil) 82° C water.

Water treatment: Aqua Unique magnetic water treatment

Place of installation: Danish Crown
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The problem:

The extent of the limescale build-up on the copper coils of the heat exchanger, was so high, that it was necessary to disassemble and acid-clean every three months.

Due to the insulating effect of the limescale, the steam pressure had to be gradually increased from 3 to 6 bar, in order to maintain the needed water outlet temperature of min 82° C.

As the steam was not adequately cooled, and partly returned as steam into the condenser before condensing, it resulted in dangerous pressure build-ups.

Outlet temperature: 87° C to 93° C, in order to assure a return temperature of min. 82° C.

Production: 375 - 450 m³/week.

Water hardness: 9° d.H.

The solution:

During Feb. 1995 a magnetic water treatment system was installed to the inlet of the heat exchanger. In order to produce the required amount of 82° C sterilisation water, it was normally necessary to begin increasing steam pressure after only 3 weeks.

In the beginning of May 1995, the heat exchanger was first inspected for control purposes after 75 working days. To deliver the requested capacity of 82° C sterilisation water, the steam pressure would under normal circumstances have been working at approx. 6 bar.

However it was now discovered that the heat exchanger was operating at its optimum level with an unchanged steam pressure of 3 bar. It was also noted that the coils had remained free from limestone deposits, and the "lime sludge" in the base of the exchanger, corresponded to approx. 3-4 % of the original mass usually found.

Consequently, we now plan to install further magnetic water treatment systems in other areas of the production plant.



Martin Bo Nielsen
Kedelimester



Claus Jørgensen
Maskinmester