Case Study  Chem-Aqua® Services

Coil Cleaning In Slovakian Biomass Power Plant

Problem
A biomass power plant processing 12-15 trucks of wood chips daily and supplying heat and electricity from renewable sources to more than 7,000 households was facing the prospect of buying new chillers after only two years in production. This was mainly because small wood particles and dust blocked the coils reducing air flow and causing inefficient operation.

In a last attempt to improve the air chillers’ performance, management decided to have the heat-transfer surfaces professionally cleaned.

Analysis
Chem-Aqua provided an experienced team of six specially-trained technicians. Over a four day period they cleaned 12 chillers with more than 360m² of chiller surface. The proprietary cleaning procedure started with mechanical removal of debris, which were then flushed out with high water flow and low pressure. A specially-designed foaming product was then applied to the coil surfaces. Finally the chemical and impurities were flushed out with a high volume of water.

Solution
After the professional cleaning was completed several positive changes were noted

- Improved air flow through the coils ranging from 29-93%, with direct improvement of heat transfer efficiency
- Chiller performance improved by 60%, which meant a return to the efficiency declared by the manufacturer
- Electricity required to operate the fans was reduced to the minimum amount
- Overall lifetime of the chiller was extended
- The capital expense of purchasing new equipment was avoided

Following the coil cleaning work, the customer was able to achieve peak performance and energy usage from the power plant’s air chillers.