

Successful repair and modernisation of a high-temperature pulp drying plant



Lifting the drum segments into place

In September 2009, a fire broke out in the high-temperature pulp drying plant of the Nordzucker sugar factory at Schladen.

An emergency call was made to BMA, who immediately dispatched a repair team in order to repair as much as possible of the damage so that the campaign did not have to be interrupted. Because the fire lasted a long time, it was very difficult to discharge the drum. The drum had considerably warped in the fire area, and so it had to be cut open, aligned and closed again by welding. The dust separators and other peripheral equipment were also affected. Continued operation in subsequent campaigns would have been very risky.

Nordzucker therefore decided to repair and modernise the pulp drying plant for the 2010 / 2011 campaign and placed the corresponding order with BMA at the end of 2009. The deliveries included the complete exchange of the drum shell with a nominal dimension of 4.6 m, with bull gear, riding rings and new riding rollers; also the discharge rings housing, a new multi-cyclone plant including dust hopper and the necessary ducts for crude and clean gas. This was the first time that BMA installed a 12-segment bull gear for a drying drum. BMA has been using this system for some time in the modernisation of extraction towers (see also BMA Information 45 / 2007).

The order included the disassembly of all plant components to be replaced, and the complete assembly of the BMA equipment supplied. A particular highlight was the transport and handling of the drum components with individual weights of up to 54 t and dimensions of about 5.3 m, which were lifted into place over the factory roof.

The fire during the campaign had been caused by the shearing-off of a drive shaft, which caused the drying drum to stop, overheat and catch fire. Since the drive motor continued to run, the damage was not detected in time in the control room. BMA has therefore developed an emergency drive, which was for the first time installed at Schladen; this ensures continued drum rotation in the event of a main drive failure. The emergency drive works independently of the factory's power supply.



The deadline fixed for completion was tight, leaving a period of only 8 months between order placement and function test for the design, procurement, disassembly and re-assembly of the plant components. Although last year's long and severe winter hampered the work, the deadline agreed was never in danger. The modernised pulp drying plant started continuous operation on time at the start of the campaign.

Hartmut Stolte

Benefits

- Cost savings through modernisation
- Realisation on schedule and adherence to the budget by BMA
- Emergency drive for better protection against fires inside the drum in the event of damage
- Easy-to-dismantle bull gear in segments



*Emergency drive for
greater safety*