

First sugar produced at Nile Sugar, Egypt



Extraction tower

\varnothing 9.6 m x 22.73 m

In BMA Information 47 and 48, we already reported on the large order for the construction of the new "Nile Sugar" sugar factory for the Egyptian company Nile Sugar Company. In spring 2010, the assembly work for equipment, electrical installation and measuring and control equipment was completed on the customer side.

With the mechanical performance tests for the first plant components having been run as early late 2009, the pipeline inspections and cold water tests could be carried out shortly afterwards. The tests of the remaining stations were completed in early 2010. This was followed by the first part of the BMA commissioning team performing hot water and steam tests as proof that the plant and the pipework are leakproof. In extensive loop tests,



Thoralf Schulz and Michael

Oehlmann (BMA) with NSC

staff members

the functioning of the field devices for measuring and control and of the process control system was tested, as were the electrical functions and interlocks. The first calibrations could also be performed.

During the night 22/23 March 2010, the first beets were sliced and extracted in the BMA extraction plant, which consists of a counter-current cossette mixer and an extraction tower. The juice purified in the classical process using milk of lime and lime-kiln exhaust gas is thickened in the five-effect evaporator plant equipped with BMA falling-film evaporators. The three-step crystallisation scheme allows for an optimal adaptation to the properties required for thick juice and white sugar to be produced. Given that the thick juice is not as pure as in Europe, it has to be correspondingly distributed to white sugar and raw sugar (A and B sugar) for sugar house control. Therefore, the recirculation of wash syrup is not included.

Collaboration between the engineers responsible for production and the BMA commissioning staff was excellent throughout the commissioning of the sugar factory. During this time, the customer's operating personnel were trained at



Joy at the first centrifuged sugar:

CEO Ali Al Dajani, CFO Rafik Joseph and the NSC production team



Evaporator station

each station and in two-shift operation by the commissioning team. The first sugar was centrifuged in the BMA centrifugals on 25 March 2010 and bagged in 50kg bags after having passed through the BMA drying and cooling plant.

In spite of the normal challenges in the different stations of a new factory, the nominal capacity of 7,000 tons of beet per day was achieved and even exceeded on several days already in this first commissioning campaign.

Here are some of the operating results from the first beet campaign:

- Duration of the campaign: 93 days
- Overall beet volume processed: 536,000 t
- Average processing quantity: 5,800 t of beet
- Production: 74,000 t of white sugar according to EC 2 standard

This has generally and by the customer been referred to as the most successful commissioning ever of a sugar factory in Egypt.

During and after the beet campaign, the raw sugar melting station was built for refinery operation. Following completion of the assembly work, the tests described above, and the inter-

connections and changeovers of diverse apparatus in the sugar house, which were required for refinery operation, the refinery season started on 15 November 2010.

The liquor produced from the melted raw sugar is purified by carbonation and filtration. It is then concentrated in two steps, before the refined sugar is produced in the sugar house, with four production steps for refined sugar and three for low-raw sugar. The refinery uses nearly exclusively those plants that are also used for beet processing. During the successful plant commissioning, white sugar of good to very good quality was produced, meeting even the high requirements of the beverage manufacturers.

Refinery operation ended in mid-January 2011 and was followed by preparations for the start of the next beet campaign in February 2011.

Michael Oehlmann