

Monitoring White

Liquor Filter



Background

The Billerud Karlsborg mill in Sweden is producing white sack paper, white kraft paper and market pulp based with the locally produced longfiber kraft pulp. In the causticizing operation conventional equipment for filtering and clarifying the green and white liquor is used. This process aims at producing good quality white liquor for the digester and also avoiding carry-over of dregs and lime mud that will upset the complete system. Manual samples after the white liquor filter are analyzed once a day. Normal lime mud content is 0-50 mg/l with an alarm level of 100 mg/l. Alarms are normally caused by holes in the filter felts that have to be quickly detected and repaired.

Application

For continuous monitoring of the white liquor preparation, the Karlsborg mill, for many years, has used the Cerlic optical sensor for measuring the suspended solids after the white liquor filter. The first sensor was installed in the mid 90s and was exchanged in 2006 for the latest generation sensor CTX20/25-K. The sensor is installed on the pipe between the filter and the white liquor storage. The acid-proof sensor is for this special application having Kalrez-seals to cope with the aggressive liquor. The by-pass pipes to the sensor are insulated to maintain a high temperature (85-95°C) to reduce the tendency of deposits on the sensor windows. The sensor is removed once a month for manual cleaning with an acid solution.



Results

With continuous monitoring of the lime mud content after the white liquor filter, increased levels of solids due to damaged filter felts are quickly detected. With this information, the problem can quickly be fixed and consequently the upset condition in the digester and chemical recovery system is minimized.

