

## Sirius for Duluth PM 1 – Production increase after extremely short rebuild time

At the end of June 2001, Stora Enso in Duluth, USA, placed an order with Voith for the exchange of the existing reel on PM 1 for a Sirius reel. The decisive factor for the placement of the order with Voith was the technologically outstanding ranking of the Sirius in comparison to other winding systems available in the marketplace as well as the guaranteed extremely short rebuild shutdown period.



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Pre-assembly

17.6.2002

Stora Enso, the market leader in magazine, newsprint and fine paper grades as well as packaging board produces 633 t/day of supercalendered SCA and SCA+ papers at the Duluth mill.

With the exchange of the reel the primary goal is to minimize the amount of broke at the reel. This goal was achieved by the following measures:

- Increase in the rewind diameter from 2,350 to 3,300 mm. This means a 50% reduction of wound rolls per day.
- The optimal roll structure with Sirius technology reduces the amount of non-usable paper to a minimum.
- Reduction of sheet breaks at roll change by the EcoChange S system.

The expectations placed in the Sirius were met from the very first roll. Stora Enso Duluth expects to save costs of almost 5 million U.S. dollars per annum by this investment.

A special challenge was the short delivery time and the extremely short shutdown period. Only 9½ months passed between the placement of the order and delivery. The short project phase required considerable efforts on the part of all those involved. In parallel with the installation of the equipment supplied by Voith, consisting of the Sirius, an automatic parent roll transport system and the Fibron VTT 3000 tail transfer system, in connection with the enlargement of the rewind diameter, Stora Enso had to make modifications to the parent roll logistics. Besides the rebuild of the unwinds at the supercalenders and winders, new and stronger overhead cranes had to be installed because of the significantly higher parent roll weight.

Working through all of these packages within a very limited time period was possible only thanks to the excellent cooperation during the project and a very pragmatic work style with short decision paths between Stora Enso and Voith.



22.6.2002

To be able to implement the extremely short rebuild time, the Sirius had to be installed on the existing sole plates. This was only possible with the very compact layout, designed specially for this reel exchange in a few days. The type of design is characterized not only by a minimization of the Sirius installation modules, but also includes the useful integration of the control components, equipped with bus technology, into the installation modules.

Before the shutdown of the PM, the Sirius was installed in line with the system already producing paper. Just 76 hours after the last parent roll change at the old reel, the Sirius was completely mounted mechanically and electrically and the I/O checks concluded.

An extraordinary performance in installation was followed by a start-up that was of world-class standard. Just 54 hours after termination of the installation work the PM was able to resume production

and the first parent roll of saleable SC base paper was wound up on the Sirius. This start-up performance can be rated all the higher because, with General Electrics, a drive supplier was selected that had until then not been able to gain any experience with the electric drive of the Sirius. Added to this is the fact that the installation of the new Fibron VTT 3000 tail transfer system was also one of the first of this kind of application. The shutdown period planned by Stora Enso was shortened by half a day despite these challenges and the very high safety standards for the installation and start-up work in the USA.

This excellent performance with regard to project handling, installation and start-up is an important milestone for future reel exchange projects. The great challenge to exchange an existing reel in a few days for a Sirius was taken up and solved par excellence. A result that the customer and supplier can be proud of and which has shown that **“together – it is possible”**.

**Patrick Moore**

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*Downtime – 5.5 days on a 6 day budget. There was an excellent working relationship between Stora Enso and Voith. The Voith commissioning crew also did an excellent job. Pre-erection on site was an obvious benefit in shortening the length of the downtime. We have been able to make jumbo reels almost from day one.*