

PacWest sizzles with vitality

The Western industry is upbeat, buoyed by the heady combination of high pulp prices and numerous capital investments.

By CINDY MACDONALD, EDITOR

The mood at the Western region's annual gathering was cheerful this year. Pulp markets are strong, and most mills have multiple upgrades underway, aided by the Pulp and Paper Green Transformation Program (PPGTP). The 200 or so attendees at PacWest were treated to a powerful line-up of business speakers, high quality technical papers, and a selection of short courses for operational personnel.

There was a lot of appreciation expressed for federal government's Green Transformation Program.

Ted Seraphim, chief operating officer with West Fraser, said the PPGTP gave "a heck of a leg up" to the industry. "In our mills, managers are coming to our management with a lot of great new ideas."

He went on to say conditions are favorable for investment right now. "We are enjoying the best market in 20 years. This is a window for us to be proactive."

"The thing I worry about most is people," said Seraphim, echoing the concerns of several other executives. "We don't have enough young people coming up behind us."

He contends that this is a good time for people to join the industry. "If you bring someone in now, ten years from now, they're going to have a senior role, if they do things right. It's the smart young people that will transform this industry, not us."

Daryl Nichol, vice-president, pulp operations, for Alberta Pacific Forest Industries, directed everyone's attention to a video designed to encourage young people to consider forestry careers. The Work Wild campaign and video can be viewed at www.workwild.ca.

The big question is: What's next?

Pursuing new business opportunities was also on the radar for the pulp mill execu-

tives speaking at PacWest. Apparently, the mandate to transform the industry's product mix has come down from the highest levels.

"Our chairman, Hank Ketcham, challenged the board to develop a bioproducts business as a third pillar," said Seraphim.

Joe Nemeth, CEO of Canfor Pulp, also said his board has given managers a mandate to find the products that will come after green energy. *(Read Nemeth's PacWest speech on page 30.)*

Alpac's Nichol explained that, so far, mills have been able to undertake the easy, obvious projects – the low hanging fruit, so to speak – with the assistance of government program such as the PPGTP and IFIT.

"This is an emerging industry," he says, "and for me, trying to determine what's next is a real challenge."

Nemeth also stated that he foresees further consolidation in the pulp sector. "I think that has to happen. If we look at commodity industries, the industries that are successful have two to three strong players. There's no question that it needs to happen."

Mills shared their experiences

The benefits of FT-NIR analysis were enumerated by several presenters during the technical sessions at PacWest.



Sharing their knowledge of the pulp and paper business were (left to right) Ted Seraphim of West Fraser, Mike Edwards of Domtar, and Joe Nemeth of Canfor Pulp.

Dharmesh Goradia of Tembec presented the results of a demonstration project at the Skookumchuck mill which used FT-NIR-based advanced control of the causticizing process.

With the FT-NIR-based advanced control, the Skookumchuck pulp mill was able to raise the causticizing efficiency by up to 4%. The improvement in causticizing operations reduced consumption of purchased lime and decreased energy consumption in the evaporators.

Following the demo, the mill decided to purchase a FT-NIR system. It is expected to be in operation by end of 2011.

Saul Mtakula's award-winning paper explained how his team used inferential



Natural Resources Canada's Glenn Hargrove, Catherine Cobden of FPAC and Daryl Nichol of Alberta-Pacific Forest Industries were all speakers in the panel discussion of "Capturing Value – Delivering on Innovation."



The Feds. These are the people who handle the details of the PPGTP: (left to right) Amanda Dacyk, Glenn Hargrove, Jean-Francois Levasseur, Martin Fairbank.

PacWest honors best papers



Mtakula

BEST PAPER, H.R. MacMillan Trophy: Saul Mtakula, Canfor Pulp LP-Intercon, *Results of Inferential Control of the Intercon Causticizing Process*. Co-author: Bruce Allison, FPIInnovations
BEST SUPPLIER PAPER: Mike Wolfensperger, Metso, *Causticizing and Lime Kiln Process Optimization*



Percy (on right)

BEST NOVICE PAPER: Jamie Percy, Alberta-Pacific Forest Industries, *Methanol Purification at Alberta-Pacific Forest Industries*
GEORGE SEDGWICK (AITF) MEMORIAL AWARD: Zhi-Hua Jiang, FPIInnovations, *Near-Neutral Final Chloride Dioxide Brightening: Theory and Practice*. Co-author: Richard Berry, FPIInnovations

control to improve control of causticizing efficiency at Canfor Pulp's Intercontinental mill.

Mtakula's paper discusses a new causticizing control system that combines CE measurement soft sensing and model-based inferencing of lime quality to achieve stoichiometric lime dosage control.

Lime addition to the slaker was determined by a stoichiometric calculation from the clarified green liquor composition and the inferred lime availability. The lime availability estimate was determined by an estimator driven by the error between model-based predictions of the slaker temperature and 1st and 4th causticizer CE values versus the actual measurements.

Implementation of the controls has resulted in a 30% reduction in white liquor CE variability and an increase of the average CE from 79% to 80%.

The 1% increase in CE translates into a reduction of roughly 6 kg/t-pulp of sodium carbonate dead load in the white liquor. Since 5-6 kg of water is required to transport one kg of dead load through the process, the dead load reduction means steam savings in the evaporators. Furthermore, the decrease in dead load reduces the total black liquor solids charged to the recovery boiler. Since the mill is recovery

limited, this potentially translates into incremental pulp production. The team calculated that a 1% increase in CE represents roughly 1000 t/y in incremental production when the mill is recovery limited 60% of the time. Based on the success of this project, Mtakula reports that the team has begun the process of justifying the purchase of a commercial FT-NIR analyzer, theorizing that better quality measurements, made at higher frequency and coupled with the controls that are already implemented, will enable the mill to reliably run an 82% CE.

The installation of a shoe press can sometimes be perceived as prohibitively costly, but for West Fraser's Hinton Pulp, the shoe press proved to be an effective way to maximize pulp production. With the installation of a shoe press and other upgrades, the production on PM#2 reached 1084 admt/d.

This is believed to be the first shoe press upgrade to a North American pulp machine.

Paulo Kapronczai of Hinton Pulp explained that the shoe press is a mechanical hydraulic press used in the last stage of the press section to increase water extraction. The shoe press installed at Hinton consists of two rolls, the deflection-compensated SymZL roll and the SymBelt roll.

The upgrades produced a Flakt dryer inlet dryness of 48% OD, four percentage points higher than the pre-upgrade dryness.

Moving from dewatering to waste water, Pierre Martel of FPIInnovations presented some work on best practices for reducing effluent impact. Martel described a collaborative research group that expects to release a set of best practices by the end of 2012.

Martel said this project marked the first time the researchers were able make a link between effluent quality and biological effects.

If mills could maintain a level of 200 mg/L going to the lagoon, even during atypical operating conditions, then biological oxygen demand after treatment would be low enough not to have an effect on fish. He believes this can be achieved by in-plant control and other measures.

Alpac branching out

Jamie Percy of Alberta Pacific Forest Industries explained the company's bio-methanol project. Up to 90% of the methanol produced in kraft pulping can be captured in foul condensate, she explained. In this project, methanol will be separated from other components of the stripper off-gas stream and purified to 99.85 wt%.

Construction on the project will be concluded late this fall. Total cost is expected to be \$9 million. Percy says Alpac will be the first pulp mill to produce commercial grade methanol from the stripper off-gas stream. Expected production is 4200 tonnes/year.

The process needs a consistent flow, so Alpac has installed a new reflux condenser, and there will be a flow control before the purification stream.

The pH of the stripper off-gas is between 9 and 10, so sulphuric acid is used to depress the pH so the ions protonate and are distilled from the solution.

During the business sessions, Alpac's Nichol spoke of the company's biomethanol project and also its interest in nanocrystalline cellulose. Although pulp is Alpac's core product, he said, "I don't think increasing our pulp capacity any more will work for us."

The future, he suggested, lies in other products.

PPC