

SUCCESS STORY

Improving stability and control efficiency by automation upgrades on a CD70 refiner



PULP & PAPER

TAKING CONTROL

ANDRITZ HYDRAULIC COMMANDER –
TOGETHER WITH TAILORED AUTOMATION

ANDRITZ

ENGINEERED SUCCESS

Improving stability and control efficiency

ANDRITZ hydraulic commander – together with tailored automation – results in smoother operations at Resolute FP Clermont Mill, Canada



Jean-Pierre Bouchard, Mill Manager

Resolute FP Clermont's TMP mill located in Quebec, Canada, is one of the leading newsprint mills in the world when it comes to cost-per-ton of production. It also prides itself on the quality of its products which are used by well-known titles such as the New York Times and other major newspaper publishers in the USA, Europe and beyond. The mill produces newsprint of a low weight basis, 40–48 g/m², on its 8.7 m wide paper machine at a speed of 1,275 m/min.

"We run a tight ship here at Clermont," says Mill Manager, Jean-Pierre Bouchard. "It is our absolute aim to achieve maximum efficiency right across the mill. The produc-

tivity of our machines and equipment here is a big deal, and due to our focus on maximizing our production capacity, along with preventative maintenance programs, we are proud to have an uptime of over 97%."

"It is our absolute aim to achieve maximum efficiency right across the mill."

JEAN-PIERRE BOUCHARD,
Mill Manager

Cruise control

The management at the Clermont recently decided that it needed an upgrade on one of the eight refiners feeding its single paper machine to better control efficiency and stability. Bouchard explains, "When thinking about the refiner we were operating, I like to compare it to cruise control of a car. When you use cruise control, you want to go at one constant speed, whether driving uphill, downhill or on a straight road. With our existing refiner we had limited control."

ANDRITZ, already a long-term supplier to the Clermont mill, was contacted to see if it might have a solution that would bring more control to the existing CD Refiner in question – an older model from another supplier. After consultation, it was decided that this would be possible and improving refiner stability could be achieved by replacing the electromechanical guide-valve with a hydraulic servo valve and removing the in-gap sensor.

The project was a first for both the mill and ANDRITZ. The scope included installing the hydraulic commander to improve refiner load stability and fiber quality, the new ANDRITZ refiner protection system AdvaCon and a new hydraulic block with servo valve, which considerably improved the response time, accuracy and efficiency of the system.



Resolute FP Clermont, Quebec, Canada

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JEAN-PIERRE BOUCHARD,
Mill Manager

New components on the CD70 refiner



- Fully automatic hydraulic unit including safety relief valves, pressure transmitters, servo valve
- AdvaCon, Advanced condition monitoring and protection system
- Position sensors
- Acceleration and vibration sensors
- Control cabinet for TWO CD refiners

ANDRITZ hydraulic block and AdvaCon



ANDRITZ hydraulic block



ANDRITZ AdvaCon

Sylvain Renaud, ANDRITZ Automation Product Manager, HC Refiners, says, "We first presented the hydraulic commander solution, along with AdvaCon in 2018, and Clermont showed a keen interest in the automation it would bring to the refiner. At first the mill was going to use the existing TDC for controlling the plate gap, but it was subsequently decided to go with the ANDRITZ contactless position sensor."

This complete hydraulic plate positioning control system upgrade for an conical disc refiner, RGP 70 CD, a first in the world, was installed and started up in March 2019, as planned. The complete hydraulic conversion, which included

- removing the guide valve (and components)
- disconnecting the internal gap sensors
- installing the new hydraulic block
- and verifying the motor start-up sequences and logics, was completed in just four hours.

The second hydraulic control until for the second refiner was installed and started up just eight months later, in November 2019.

"We first presented the hydraulic commander solution, along with AdvaCon in 2018, and Clermont showed a keen interest in the automation it would bring to the refiner."

SYLVAIN RENAUD,
ANDRITZ Automation Product Manager

"No more head-phone calibration that changes depending on who is doing it, no more sensors to buy, no sensors to change and check. Now, we press a button and everything is automatic, and works every time."

STEEVE PERRON,
Production Manager, Clermont mill



Refiner area at Resolute FP Clermont plant. From left to right: Frédéric Turcotte, TMP Superintendent assistant; Sylvain Leblanc, Electrical Superintendent; Steeve Perron, Production Manager; Donald Pelletier, Mechanical Superintendent; Sylvain Renaud, ANDRITZ Automation Product Manager; Jocelyn Gauthier, Control Specialist and Philippe Martel, TMP Superintendent

The new control system now manages simultaneous plate positioning of the CD and flat zone on the CD refiners. It maintains plate positioning on both zones using standard contactless sensors. The control system also manages plate protection, logics static and dynamic zeroing, as well as providing an up-to-date control platform that is user friendly for operators.

Mill manager Bouchard is happy with the results of the updated refiner, he says, "We have gone from monitoring the running of the refiner literally by the sound it makes, to now being able to actually analyze the data and fine tune the efficiency and quality of the output.

"The delivery and start-up went well, and when there were hurdles or challenges, both the mill and ANDRITZ experts soon overcame them. We feel now that with just a few tweaks, we will be pretty much close to the optimum operational efficiency and we are very close to the sweet spot."

Philippe Martel, TMP Superintendent, Clermont mill says, "There was an adaptation period where operators had to understand the new system, where the plate zero was and how to run the line with the new system; but it went well and after a few weeks, everybody was trained.

"The most interesting aspect of the project to me was replacing the guide-valve with the new ANDRITZ hydraulic block, having a servo valve has really improved response time."

Steeve Perron, Production Manager, Clermont mill, adds, "The most impressive aspect of the project from my point of view was the removal of the TDC which makes our lives so much easier; no more head-phone calibration that changes depending on who is doing it, no more sensors to buy, no sensors to change and check. Now, we press a button and everything is automatic, and works every time."



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