

SUCCESS STORY

Automation upgrade of
multiple existing refiners
for MDF production: L46,
M60 and 54/58-1CP



PANELBOARD THREE OF A KIND

ANDRITZ HYDRAULIC COMMANDERS
MAKE A BIG DIFFERENCE AT
SONAE ARAUCO

ANDRITZ

ENGINEERED SUCCESS



On the first page and above: outside views of Sonae Arauco plant in Valladolid.

The challenge: control limitations on old refiners



Enrico Fuser, ANDRITZ Senior Sales Manager and Alfonso Del Rio, GTECH Corporate Team, testing the new ANDRITZ control cabinet with touch screen at Sonae Arauco plant in Valladolid.

Sonae Arauco is one of the leading producers of wood-based panelling, chemical and impregnated paper, including medium density fibreboard (MDF), particleboard (PB) and orientated strand board (OSB).

GTECH CORPORATE TEAM

Through its highly specialised and dedicated GTECH (Group Technology) Team, Sonae Arauco keeps at the forefront of industrial and production expertise when it comes to producing wood-based products of the highest quality at the very best efficiency. The group dedicates a high percentage of their incomes on a yearly investments across its plants. Alfonso Del Rio, member of the GTECH Team says, “Mr. Fernando Oliveira formed GTECH in 2015 by selecting some of our most experienced people, to identify areas across all our plants where we could drive efficiency & productivity through systematic engineering analysis.

One of the areas at its MDF plants, where the GTECH experts identified potential improvement (aligned with its Technological Planning), was the refiner control systems, most notably at four MDF plants, Mangualde in Portugal, Valladolid in Spain and Beeskow and Meppen in Germany.

Mr. Del Rio says, “Our customers are very demanding when it comes to quality, and we wanted to make sure we could provide fiber geometry and dimension as per Product Quality Requirement without any operator intervention and using the state of the art Automation control. Plus, we needed to have more control over our refiner operations across the board – including increased reliability, reducing downtime, and better energy management.”

ANDRITZ KNOW-HOW

Sonae Arauco started talking to ANDRITZ in late 2015 with a full presentation on its proven hydraulic commander technology being given in early 2016. After consultations, on-site surveys and technical considerations, this upgrade was considered the best choice for the group.

Three ANDRITZ hydraulic commanders were installed at Sonae Arauco sites, one in the summer of 2016 on an M60 refiner Beeskow, followed by the two others – one on a L46 refiner at Valladolid and another one on a 54/58-1CP refiner at Meppen in the summer of 2018.

The ANDRITZ solution: hydraulic commander and automation upgrades

Three very different projects – one effective solution for SONAE ARAUCO in Europe: The individually customized installations of ANDRITZ hydraulic commanders represented three completely different projects in terms of existing technical refiner types and set-ups.



THE L46 REFINER AT VALLADOLID, SPAIN

had a manual system for the refiner gap adjustment utilizing the original hand wheel.



THE M60 REFINER AT BEESKOW, GERMANY

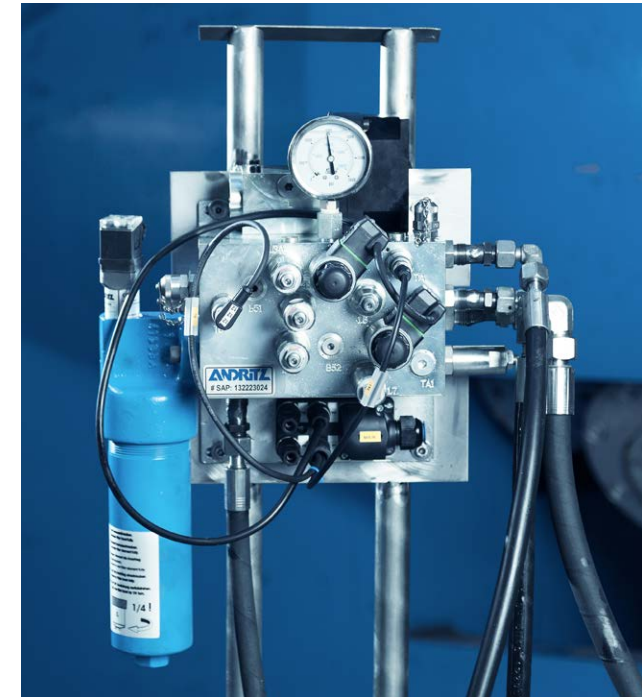
had a stepping-motor solution for adjusting the refiner gap.



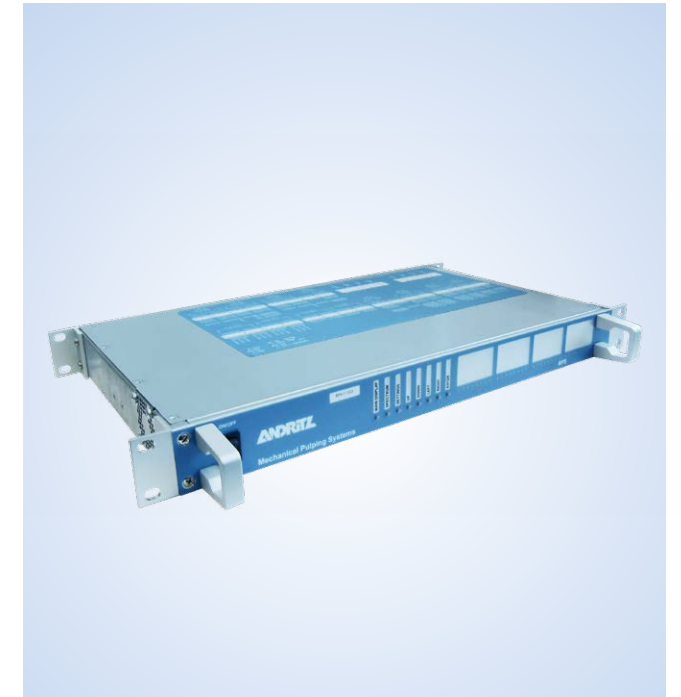
THE 54/58-1CP REFINER IN MEPPEN, GERMANY

had an electro-mechanical solution for adjusting the gap.

GTECH HEADQUARTERS
MAIA-PORTO, PORTUGAL



ANDRITZ hydraulic unit.

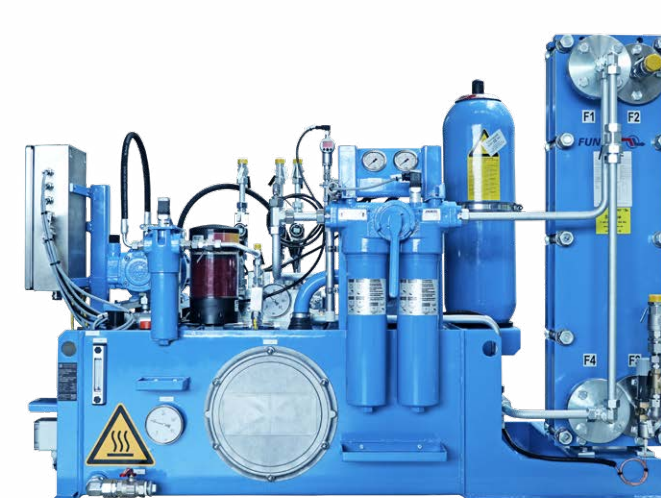


ANDRITZ Refiner Protection System (RPS).

THE SOLUTION WAS THE SAME: TO INSTALL ANDRITZ HYDRAULIC COMMANDERS AT ALL THREE SITES WITH THE FOLLOWING NEW COMPONENTS ON EACH REFINER

- One fully automatic hydraulic unit
- One position sensor
- One acceleration and one vibration sensor to monitor the axial and radial loads
- One RPS (Refiner Protection System) to analyze

- the incoming signals from the sensors and able to protect the refiner
- One control cabinet with electrical components and a touch screen for local visualizations, controlled by means of open software



ANDRITZ lubrication and hydraulic unit.

At Meppen there was an additional scope of supply from ANDRITZ to implement the hydraulic system consisting of two hydraulic cylinders, and a lubrication and hydraulic unit.

AUTOMATION UPGRADES

Together with the hydraulic commander, ANDRITZ Refining Service Team supported Sonae Arauco with the implementation of other automation upgrades, according to the plants' needs:

- S5-S7 modernization
- Improved visualization on the control room
- New production sequences: like for example the pre-heating of the equipment and semi-automatic start-up, to reduce set-up times and improve the whole process, thus saving time and energy
- Integration with different fiber quality measurement devices at the forming area
- Preparation of the systems for innovations on industry 4.0

All automation solutions from one ANDRITZ source to guarantee best reliability and no issue for the plant.

The results

The ANDRITZ hydraulic commanders hit all the right spots for the updating and automation of Sonae Arauco's refiners.



The new ANDRITZ solution with hydraulic commander on the L46 refiner in Valladolid, Spain.

All three plants now have fully automatic hydraulic units for optimising refiner plate adjustments bringing the benefits of uniform fiber quality at the same time as reducing energy. Added benefits include constant force control which can hold the refiner power at the maximum level of stability which evens out the hydraulic pressure and therefore increasing the life time of

refiner bearings. Automatic refiner plate sensors on the ANDRITZ hydraulic commanders also detect interruptions in pulp feed, which ensure the plates are moved apart before they can clash meaning safe and normal operation is ensured – before the refiner loads again automatically.

Customer satisfaction



Refiner area at Valladolid plant, from left to right: Jesús Merino, Mechanical Manager; Jose Maria Calvo, Shift Leader; Luis Ferrari, Electrical Manager; Enrico Fuser, ANDRITZ Senior Sales Manager; Alfonso Del Rio, GTECH Corporate Team; Alberto Castrillo, Plant Manager Sonae Arauco Valladolid.

"At Sonae Arauco we pride ourselves on being at the forefront of the best available technology," says Del Rio. "One of the areas we are constantly working on at our existing plants is making the move from manual to automatic. In the case of the installations of ANDRITZ hydraulic commanders for our plants at Valladolid, Meppen and Beeskow, we did just that. We adapted what was aged equipment, mostly manually operated, into three fully automatic refiners that we can monitor remotely from our control rooms."

"We now are able to better maintain constant quality from our control rooms, despite the fact that raw material quality can vary, at the same time as managing and monitoring our energy use. The new sensors and automation protecting refiner plate clashing extend

the life duration of the refiner plates and gives us a great benefit as damage can occur very quickly, and plate changing can result in a lot of downtime."

Enrico Fuser, ANDRITZ Refining Systems Service, Senior Sales Manager, says: "The successful installation of ANDRITZ hydraulic commanders on three completely different refiners and the automation support at Sonae Arauco's sites clearly illustrate that quick and easy installations are our service possibilities for the customer, bringing even much older plants up to modern, state-of-the-art standards. Advanced process controls mean that controlling fiber quality can be managed maximising the use of energy, at the same time as improving the machines' reliability and safety."

"We were delighted with the way that ANDRITZ performed on all three projects, and the way its people managed the relationships with the management at the Sonae Arauco plants, as well as with us at GTECH. During all three projects we had a good, open communication, and it really helped that ANDRITZ has skilled people that can speak the local languages, as cultural elements really do make a difference when undertaking these types of projects."

ALFONSO DEL RIO
GTECH Corporate Team



THE ANDRITZ REFINING SERVICE TEAM GLOBAL SUPPORT FOR ANY KIND OF REFINER

We also want to take up your challenges! For more information about ANDRITZ's services, please visit andritz.com/hydraulic-commander or andritz.com/refiner-service for details

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