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(ACE®) in practice. What is ACE®? Marcos Freitas, Sales Director for ANDRITZ Auto-
mation in Brazil, explains:

“Take your very best operator, keep him/ her alert and motivated 24 hours a day, seven
days a week, and there you have ACE®. ACE® is an expert operator, optimi-
zing a process (kiln or drying plant or bleach plant or whatever) for production, quality, and safety. The operator sets a production target and ACE® controls the production rate, temperatures, flows, etc. to make that production. ACE® always tells the operator what it is doing and why. It is not a black box, but an operator’s friend. It works with anyone’s DCS and is very easy to install.”

What got Gilmar Franco’s attention (Veracel’s Pulp Production Manager) was that
ANDRITZ had so much confidence in ACE®. “They said that if it didn’t achieve the results, they would remove it at no cost to us,” Franco says. “We have no in-
tention of giving ACE® back. We have be-
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Kiln ACE®: stability and cost savings

Estanislau Zutautas, Coordinator for the
Causticizing/Kiln area, came to the Vera-
cel mill in April 2009. “At that time, opera-
tors were trying to use advanced process
control software from another supplier, but
were not getting good results. So, they stopped using it.”

Specialists from ANDRITZ Automation
came to the mill to install and fine-tune the
Kiln ACE® system. “This period of time
was valuable,” Zutautas says. “Their spe-
cialist had his own experiences with kilns
around the world. He worked side-by-side
with our operators, asking questions and
discussing the best way to control the kiln.
It was helpful to have these discussions, and the outcome was very good.”

Even before Kiln ACE®, Veracel was
improving the causticizing plant. Ari Medeiros, Recovery & Utilities Manager,
says, “We did a very good job together with ANDRITZ to change the internal de-
sign of the white liquor filter (CD-Filter). We have been running this new design for a year and the results are very nice. Cal-
cium oxide in the lime is reduced, which
improves the lime mud dryness.”

After Kiln ACE® was installed, Veracel ran
the kiln for one month with no control to
establish a baseline. Then the control was
turned on.

“We got very good stability in the kiln op-
eration and very good lime quality from the beginning,” Zutautas. “A major goal for us was to reduce oil consumption by substit-
tuting methanol from the striping plant. In
the past when we tried this, the TRS emis-
sions rose too high. After all the changes
we made after the shutdown, we reduced
oil consumption from 130 kg/t to 100 kg/t.
We can attribute about 6% oil savings
directly to Kiln ACE®.”

“What has helped us most is the stable
quality of lime,” says operator Evaristo
Bove. “This stability allows us to burn
methanol within TRS limits, and also frees
us up to focus on other ways to improve
the process. We are no longer the bottle-
neck, and our throughput is better than
expected.”

“Good stability ... good lime quality ... and reduced oil
consumption. We are no longer a bottleneck.” Estanislau Zutautas, Causticizing/Kiln Coordinator

Dryer ACE®: improvements upon already
outstanding performance

Jorge Sarcinelli, Drying and Packaging
Coordinator, recounts the story at Vera-
cel. “ANDRITZ talked to us about installing a
Dryer ACE® system soon after start-up,” he
says. “In October 2008, we took the first step, which was to use the system for
optimizing basis weight and moisture pro-
files of the pulp sheet.”

“We have much better control of tem-
peratures in the calcination zone, and
have eliminated hot spots,” says operator
Francelino Filho. “This extends refractory life much longer than we ever experienced
before. I have to confess that I did not
believe it would be possible to operate the kiln with oxygen below 1.5%, but Kiln
ACE® has shown this to be possible. This
saves us fuel and keeps TRS emissions
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“When you have confidence in your instru-
ments and lab reports, and you have a tool
like Kiln ACE®, it’s easy to control the proc-
есс,” Zutautas says. “We now have all the
tools that we need.”

“In general, the cooperation with ANDRITZ has been excellent,” says Medeiros. “The white liquor plant used to be one of our
biggest bottlenecks, but now we are run-
ing 10-15% over the design capacity in a
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Jorge Sarcinelli, Drying and Packaging
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Kiln ACE®: stability and cost savings

Estanislau Zutautas, Coordinator for the Causticizing/Kiln area, came to the Veracel mill in April 2009. “At that time, operators were trying to use advanced process control software from another supplier, but were not getting good results. So, they stopped using it.”

Specialists from ANDRITZ Automation came to the mill to install and fine-tune the Kiln ACE® system. “This period of time was valuable,” Zutautas says. “Their specialist had his own experiences with kilns around the world. He worked side-by-side with our operators, asking questions and discussing the best way to control the kiln. It was helpful to have these discussions, and the outcome was very good.”

Even before Kiln ACE®, Veracel was improving the causticizing plant. Ari Medeiros, Recovery & Utilities Manager, says, “We did a very good job together with ANDRITZ to change the internal design of the white liquor filter (CZ-Filter). We have been running this new design for a year and the results are very nice. Calcium oxide in the lime is reduced, which improves the lime mud dryness.”

After Kiln ACE® was installed, Veracel ran the kiln for one month with no control to establish a baseline. Then the control was turned on.

“We got very good stability in the kiln operation and very good lime quality from the beginning,” Zutautas. “A major goal for us was to reduce oil consumption by substituting methanol from the stripping plant. In the past when we tried this, theTRS emissions rose too high. After all the changes made after the shutdown, we reduced oil consumption from 130 kg/t to 100 kg/t. We can attribute about 6% oil savings directly to Kiln ACE®.”

“With ACE® in place, we are no longer a bottleneck,” said Estanislau Zutautas, Causticizing/Kiln Coordinator.

“The ANDRITZ drying machines at Veracel. Dryer ACE® optimizes production and controls the basis weight/moisture profiles to produce an excellent pulp sheet. Plus, it coordinates control of the screening plant.”

“Good stability … good lime quality … and reduced oil consumption. We are no longer a bottleneck.”

Dryer ACE®: improves upon already outstanding performance

Jorge Sarcinelli, Drying and Packaging Coordinator, recounts the story at Veracel. “ANDRITZ delivered the white liquor plant (kiln and causticizing) to Veracel on an EPC basis for the greenfield start-up in 2005. In order to build the computer model, ANDRITZ Automation worked with Veracel to take measurements on the dewatering and drying machine at various positions and times: at different production rates and with different ratios of virgin-to-broke. This took some time, because according to Sarcinelli, “We were running at full production. We didn’t have the luxury to slow the machine down just so they could take their measurements. But, over several weeks they were able to build the complete model.”

With Dryer ACE® running, Veracel saw that it had improved the quality of their pulp sheet in terms of moisture and basis weight control on the drying machine.

“The ANDRITZ drying machine has become the Veracel operators’ best friend. “We now have all the tools we need.”

“We have much better control of temperatures in the calcination zone, and have eliminated hot spots,” says operator Francelino Filho. “This extends refractory life much longer than we ever experienced before. I have to confess that I did not believe it would be possible to operate the kiln with oxygen below 1.5%, but Kiln ACE® has shown this to be possible. This saves us fuel and keeps TRS emissions low.”

“When you have confidence in your instruments and lab reports, and you have a tool like Kiln ACE®, it’s easy to control the process,” Zutautas says. “We now have all the tools that we need.”

“In general, the cooperation with ANDRITZ has been excellent,” says Medeiros. “The white liquor plant used to be one of our biggest bottlenecks, but now we are running 10-15% over the design capacity in a very stable way.”

So, step two for Dryer ACE® – screening management – was added. The work was completed in June 2009.
is variability in the pulp when it arrives here, we can see the ACE® system moving setpoints to control the screening and reduce the machine speed automatically," Sarcinelli says.

According to Sarcinelli, it’s not so simple to measure the economics of Dryer ACE® as it might be in other process areas. “I can tell you this: we have eliminated the shutdowns that we had before,” he says.

“Within the 16-hour buffer inventory we have with the fiberline, ACE® is in control. Another measure is pulp quality. We have fewer variations in moisture, which saves us money. At the same time, if we want to go from 150 m/min to 185 m/min, ACE® raises the machine speed while keeping the moisture and basis weight profiles in the target range. It’s very easy for us and avoids lost production.”

According to Pulp Production Manager, Gilmar Franco, “After the installation, we could see the results immediately. The process runs in a very stable condition and the control is completely automatic. The system is very reliable and we use it all the time. The original expectation was to have better control of the dying machine. The control of the screening plant is a big plus for us.”

“ACE® operates the total drying plant to the maximum of what the machinery can produce at that moment.”

“The situation at Veracel today is that the dying plant no longer feels the impact of minor disruptions in the fiberline. “If there is variability in the pulp when it arrives here, we can see the ACE® system moving setpoints to control the screening and reduce the machine speed automatically,” Sarcinelli says.

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The Latin words Valeo (strong) and Nobilis (noble or distinguished) are impressive words to describe screen baskets. Do the new Bar-Tec® screen cylinders from ANDRITZ Fiedler live up to such lofty names?

“We are in the business of improving,” says Manfred Renner, “not just replacing.”

And what do you do when there is little room for further improvement?

“We innovate!”

Renner is the Managing Director of ANDRITZ Fiedler, supplier of screen baskets and rotors. ANDRITZ acquired the German Fiedler in 2003 and moved forward with its Bar-Tec® series of wire screen baskets, which are very well regarded in the industry.

The two key parameters for any screen basket are strength and accuracy. There has always seemed to be a trade-off between the two. “There are very strong baskets on the market, but the slot width accuracy is not very good,” Renner says. “And, there are baskets which were very accurate, but not strong enough for certain applications.”

The Bar-Tec® W basket is a welded design. It is produced “in the round” (i.e. drawn wires are set in laser-cut rings) instead of using flat mats which have to be rolled into a circle. This manufacturing technique eliminates joints and reduces stresses in the support rings. “We have sold thousands of units, and for most applications, this design works superbly,” Renner says.

“But our job is to be looking into the future,” he says. “We are at the technical limitations where we can’t make a welded basket stronger or more accurate.”

So Renner challenged his R&D team to come up with new basket designs that would exceed the capabilities of current screen baskets and would also have the flexibility to add other benefits in the future.

In reality, this meant one design for high-pulse, high-stress load applications (like OCC) and one design for applications requiring the narrowest slot widths and the highest slot width accuracy (like deinked pulp).

The other challenge: it had to be cost-competitive.

We accept the challenge

“Every designer and developer likes a big challenge,” says Thomas Mickelat, R&D...