

KILNS MAKEOVER

By
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Continuous dry kiln upgrade lowers operating costs and positions the mill for future market opportunities.

MEXIA, Ala.

In August 2009, when the lumber industry was being hammered hard by depressed housing markets and many mills were curtailing operations, Martin Companies, LLC, boldly embarked on a \$5 million capital improvement project to increase operating efficiency and expand production capacity at RoyOMartin-Rocky Creek Lumber, an Alabama pine timbers mill acquired in 2006.

The project encompassed converting two conventional dry kilns to continuous



Renovated kilns stretch 180 ft.

dry kilns (CDK) and installing direct-fire bark burners for each kiln. Drying energy efficiency increases considerably by utilizing available bark and sawdust byproducts, significantly reducing natural gas consumption. Completion of the final phase of the project in March adds Rocky Creek Lumber to the handful of sawmill operations across the South that are licensed to use the patented continu-

ous dry kiln technology.

Previously, the mill operated three direct gas-fired Irvington-Moore (USNR) kilns. One of those was converted to a CDK. The second CDK is a rebuilt conventional unit, purchased and dismantled from a former Plum Creek sawmill in Montana. That installation brings the total number of kilns to four: two gas-fired and two continuous dry kilns.



Continuous dry kilns utilize bark through a hog, metering bin and two burners.



About 80% of the mill's 100MMBF annual production is processed by the converted kilns, helping to provide a stable supply of product to customers.

American Wood Dryers handled the kiln rebuilds and infrastructure modifications, including new zone conditioning and control systems. Hurst Boiler & Welding Co. supplied the two bark burners. Bark is processed at a 300 HP Kimwood hog and stored in an MEC metering bin (reclaimed from an old RoyOMartin-OSB forming line). It feeds the hogged fuel to both burners.



Subcontractors on the project included: Excavation R&R Const., Monroeville; Hammer, Inc. of Monroeville, Ala. for the concrete work; Tri Delta, Panama City, Fla., electrical engineering; Tracer, Panama City, and ICS of West Monroe, La. for electrical installation; R&L Consulting, Inc., Albany, Ga., handled the programming and controls. Triple A Fire Protection, Inc., Semmes, Ala., supplied the fire-monitoring and

suppression systems. Hydraulic piping was from Gatlin Corp., Brookhaven, Miss.; and mechanical installation by Industrial Installations. Kiln carts and miscellaneous mechanical were provided by Peppers, Brookhaven, and Escofab, Atmore, Ala.

The continuous kilns are 180 ft. in length and have dual tracks that simultaneously feed green lumber cribs from both ends of the kiln. It is a highly efficient system because as the wet and dry packs pass each other on parallel tracks, moisture coming from pre-heating the green (wet) lumber entering the three-zone kiln conditions the dry packs of lumber as they exit the kiln. Operators monitor all four kilns and burners from a central control room. On the American Wood Dryers retrofits, they are able to track and independently adjust the rate at which kiln cars move through the kiln. Loaded cars enter and exit the system about every 15 to 17 minutes.

"The biggest thing that has challenged us is that the concept of drying is different," states Plant Manager Allen Smith, who notes that there is no wet bulb or vents to control humidity levels. Adjustments are made by changing the heated air temperatures and/or feed rates of the hydraulic pushers that advance the packs. At any given point, Smith notes, there are about a half-million feet of wood committed to the dryer.

"Benefits include reduced standard deviation, reduced drying defects and increased production," Smith reports. Conditioning the lumber on both ends, as it enters and exits the CDK, he says, eliminates most drying defects commonly seen with conventional kilns.

"We not only increased our total drying capacity, we significantly reduced our drying costs due to not using natural gas," adds business-unit manager Dave Weak. However, he emphasizes, keep-

ing some gas-fired capacity is also beneficial for drying low-volume items in the product mix. There would typically not be enough to fill the kiln, which is about three times the length of a traditional package kiln. Most of production goes to treaters, who serve a wide range of do-it-yourself and niche markets.

Weak concedes that this is not an easy time to be making any kind of wood product; however, RoyOMartin-Rocky Creek Lumber is continuing to make quality lumber. In addition to reducing drying costs, favorable factors that helped RoyOMartin-Rocky Creek Lumber through the tough times include the facility's simple, but efficient, design and the use of low-cost raw materials.

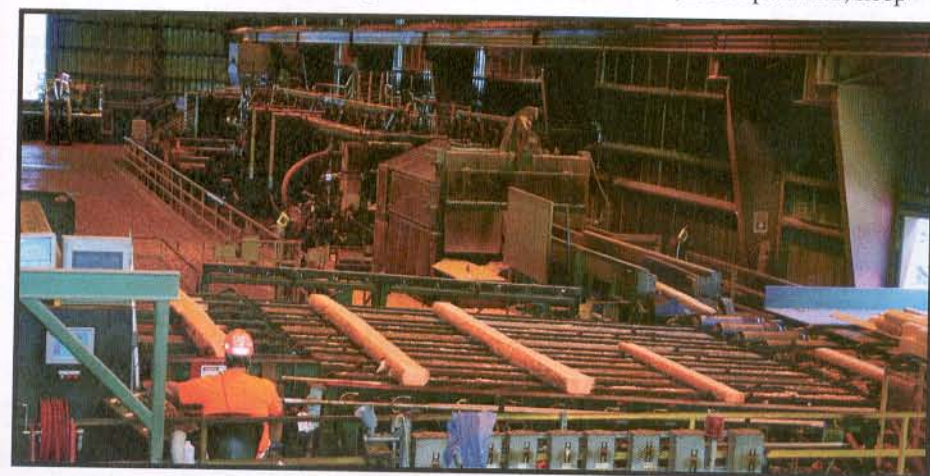
This kiln project along with other production upgrades and system updates on the mill floor have added roughly 20-25MMBF to yearly production averages since Rocky Creek Lumber joined the RoyOMartin family. Targeted production volume for 2011 is 102MMBF.

WORKFORCE

One of the first things RoyOMartin-Rocky Creek Lumber did after purchasing the facility was to add another shift to accommodate the increased capacity, reflecting the "full-speed-ahead" operating philosophy of the third-generation, family-owned corporation headquartered in Alexandria, La. "We are fortunate in that we have kept the doors open and we are running, which really reflects the commitment of the company's owners," Weak states. "Their philosophy is to run these operations (at full production capacity), not halfway. They understand the significant impact these facilities have on not only the employees, but the local suppliers, contractors and the community."

Rocky Creek Lumber continues to operate three 12-hour shifts, running the mill almost around the clock. Production is actually down only three 12-hour shifts each week—day shifts on Friday, Saturday and Sunday. That time is used to handle preventive maintenance and other needs, as well as general house-keeping chores that cannot be done during operations.

Overall workforce has grown to 112, an increase of about 33 employees since RoyOMartin purchased the facility in 2006. This includes about a dozen managers and supervisors on staff. Striving to be an "employer of choice," RoyOMartin-Rocky Creek Lumber enjoys a stable workforce and relatively low employee turnover. Several team members



Two-sided cants exit DLI line and flow downstream.

have been on board since the mill started up in July 2001.

Rocky Creek Lumber invests in its employees through extensive cross-training, which provides individuals with opportunities to learn the processes of other areas of the mill and advance to lead positions. Smith notes that retention rates are better when employees are involved in both what is going on in their department and in overall mill operations.

RoyOMartin-Rocky Creek Lumber emphasizes that safety is the responsibility of every employee in the plant. In fact, it is infused in workplace performance. Daily emphasis starts with the lead team's morning meetings, where participants discuss a "safety contact" they have had that day. Each department supervisor also holds a pre-shift meeting where team members discuss safety concerns. All lead-team members are held responsible for conducting weekly safety audits, and all employees must do at least one audit per month. Additionally, a safety professional from headquarters comes in monthly to conduct safety training.

PRODUCTION

Incoming trucks are weighed at Toledo scales and unloaded by a Deamco 25-ton crane, which also feeds the mill. Additionally, logs may be offloaded by a stationary Prentice 410 loader used to maintain singular log flow as they advance to the debarker. Logs are debarked by a Nicholson 22 in. A7 ring debarker, recently refurbished with a new ring. Logs then enter a USNR/Bowlin merchandiser system, upgraded in April with a dual-zone MPM log scanning and optimization system. Once the system determines its solutions based on price, recovery and demand (among other factors), logs are cut to length by five shifting saws, plus one fixed blade.

Smooth startup of an MPM system installed at the Roy-OMartin-Plywood mill in Chopin, La. put the vendor in the running for this installation. Managers completed a barrage of tests on the system to see what results they could expect in a timbers mill application before MPM was awarded the contract. In addition to recovery improvements, the installation provided improved control of the log mix going into the mill.

Logs up to 20 ft. in length enter the mill, and kickers



Left to right, front row, **Brianne Hames, PM Systems; Bert Campbell, sales manager; Chrissy Sturdivant, HR manager; Brenton Dorrough, sawmill supervisor; Max Craig, Corp. safety manager; Dave Weak, Business Unit Manager;** back row, **Shay Harper, shipping supervisor; Allen Smith, plant manager; Bennie Fox, planer lead; Donnie Ward, maintenance superintendent; Cameron Hybart, procurement manager**

place them to one of two holding decks, separating lengths 12 ft. and over from those that are under 12 ft. This helps to eliminate log hang-ups in the step feeder as they advance to an Optimil DLI canter. Logs are positioned on the DLI for opening two faces prior to entering the canter. Last year, the canter's optimization package was replaced with USNR's MillExpert system, which uses dense 3-D scanning technology.

Original canter heads on the system were replaced with solid Iggesund heads and an Iggesund tool-knife system in 2008. One benefit of the solid-head design is that it has more mass and centrifugal force, which improves the cut, makes a smoother face on the cant and produces higher quality chips, notes Smith. In addition, the increased weight of the head allows the DLI to run a little faster.

Two-faced cants exit the canter line and are laid on their sides as they transfer to the edger landing table ahead of a four-saw USNR edger, which replaced a two-saw edger shortly after RoyOMartin bought the mill. This captures more sideboards to improve recovery and diversify the product mix to accommodate ever-

changing market factors.

Timbers then enter a Baxley/Hi-Tech 20 ft. trimmer and 42-bin sorter. In 2008, RoyOMartin-Rocky Creek Lumber updated to higher-resolution Baxley scanner heads and replaced original Hi-Tech scanner heads at both the edger and trimmer. The sorter empties to a conveyor below that feeds a MoCo Engineering automatic sticker stacker and has the ability to position timbers with a gap on each side for better air flow in the dry kilns. From there, two Taylor 350 forklifts transport lumber packs to a kiln in-feed and return with dry packs which are unstacked and fed to a Yates American 2012 planer operating at 600 FPM.

After the grading booth, a Lucidyne grademark reader, installed in 2009, directs saw positioning on a Baxley/Hi-Tech trimmer. Material flows to a Baxley/Hi-Tech 30-bin sorter running parallel to the green end sorter. Timbers are packaged by a Baxley dry stacker and Signode strapping station. Material handling in the warehouse and shipping department is done by two Taylor 160 forklifts.

There is no filing room on site because the mill uses disposable chipper knives, and there is no bandmill. Saw filing for the edger and trimmer circle saws is outsourced to Houston Saws in Centerville, Ala.

In-house consumption of bark and sawdust material has increased this year with the startup of the second bark burner. Shavings continue to be sold as raw material for particleboard plants, and chips go to paper mills.

In the end, RoyOMartin-Rocky Creek Lumber's state-of-the-art, computerized mill produces premium southern yellow pine timbers, ensuring consistent quality and availability.



Timbers are Rocky Creek's bread and butter.