

**Published by  
Siemens Industry, Inc. 2016**

Process Industries & Drives  
100 Technology Drive  
Alpharetta, GA 30005

For more information, please contact our Customer Support Center.  
Phone: 1-800-241-4453  
Email: [info.us@siemens.com](mailto:info.us@siemens.com)

Order No. FICS-00001-0416  
Printed in the USA

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The background of the entire page is a photograph of a large industrial facility, likely a paper mill. A massive, continuous roll of brown paper is being processed by a complex system of blue and silver machinery. Two blue platforms with silver railings, both labeled 'VOITH', are positioned at different levels of the machinery. The scene is filled with pipes, cables, and mechanical components, creating a sense of a large-scale industrial operation.

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# Run of the mill to state of the art

Alsip MiniMill, LLC - Case Study

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# Siemens converts fine paper mill to containerboard mill.

To ensure project success, Siemens uses the right mix of existing and new equipment combined with industry expertise.

*“The conversion of the idle coated paper mill took less than nine months from the time the orders were placed with suppliers such as Siemens” – John Potocsnak*

Alsip MiniMill LLC, a subsidiary of Corrugated Supplies, based in Bedford Park, IL, is known for its embrace of the best and most innovative solutions for the pulp and paper industry. Last year, the company's CEO, John Potocsnak, coordinated the purchase of an idle recycled coated printing and writing paper mill located in Alsip, IL. Today, the mill is experiencing a renaissance.

The journey began in January 2015, when Corrugated Supplies purchased the idled facility. In April of that year, Alsip MiniMill President K.G. Rajan reached out to Siemens and the machine builder Voith for help with the project. The goal: convert the mill to a containerboard-making facility.

Since the mill had been shuttered, the project required a thorough assessment of the existing equipment and infrastructure. And once Siemens, Voith and MiniMill team members determined the modifications needed to convert the mill, a creative, fast, and flexible approach was needed. The experienced Siemens fiber team was up to the challenge.

## Conversion combines old and new

MiniMill hoped to reuse as much existing equipment and wiring as possible. The team found some existing equipment useful in the conversion, while updates and upgrades were still needed where it made sense. “Siemens was part of finding the right mix of old and new equipment,” says Rajan.

Siemens was able to modify existing cabinets and reuse much of the hardware and wiring. By minimizing both the amount of new hardware and the labor costs involved in pulling cables and rewiring, MiniMill was able to realize significant savings. While the mill is generally a 50-50

split between old and new, it now consists of nearly 100 percent of Siemens electrical and control systems.

Siemens supplied many components for the pulping and papermaking systems, including large drives for the paper machine, motors and the distributed control system (DCS). The SIMATIC PCS 7 is used for both drives and the DCS and this Siemens global solution standard is called SIPAPER. SIPAPER uses the same dashboard for both drives and DSC, so training and support are simplified.

## Flexibility answers rebuild challenges

Siemens also provided flexibility in both equipment design and the deep product line from which to choose the best solution. For example, the new paper machine required larger motors and gearboxes. Unfortunately,

### Challenges

- Convert facility from coated paper to containerboard
- Cut costs by repurposing existing equipment
- Update technology to future-proof viability

### Keys to Success

- Right mix of new and existing equipment
- Smooth ramp-up to full operation
- US and HQ collaboration and customer dedication
- Customer Service group involvement
- Training and ongoing support



#### Solutions and Services

- New coordinated drive system and motors, including gearless permanent magnet motors
- SIPAPER DCS automation
- Installation supervision, commissioning, consignment spares
- Future preventive maintenance program, including consignment spares

the space on the drive side of the machine prohibited a traditional approach. To answer the challenge, Siemens provided gearless permanent magnet motors that allowed the needed space for operations and maintenance. The ability to reduce the footprint by eliminating gearboxes proved an important feature in a retrofit where every foot counted. In addition, the Siemens Customer Service group provided services and spares for the repurposed old equipment.

The data-driven design of the control systems provides for flexible, optimal operation. "Siemens has great communications. The drives, the control systems – all of that is very much without any black boxes," says Rajan, adding that transparency of data helps MiniMill keep the plant at peak performance.

#### Involved in success

Performance is a principal focus of Siemens. That's why the company takes care to concentrate on details such as a smooth transition to full operation, complete training and ongoing support. "They teach you to fish," says Rajan, noting that the ability to be self-reliant pays dividends. "Siemens is very much involved in making sure we are successful on day one but also

for the next one or two years," he notes.

The partnership completed conversion of the facility to recycled containerboard production in January 2016. By the end of that month, sheets were on the reel.

The plant is designed to produce roughly 220,000 tons of paper per year. "We expect to reach 100 percent of uptime within the first six months of operation," says Rajan. And the MiniMill owner Corrugated Supplies expects the fruitful relationship with Siemens to continue, with further plant modifications and new projects on the horizon.

*"Siemens is very much involved in making sure we are successful on day one but also for the next one or two years."*  
– President  
K.G. Rajan

#### Results

- Plant produces 220,000 tons of paper per year
- Updated technology increases competitiveness, revitalizes facility
- More than 100 jobs created