



# Wood cellulose fiber production benefits from Siemens level measurement solution

## Situation

A paper mill in the Southeast U.S. produces wood cellulose for use in high-performance specialty cellulose fibers. These fibers are used in a wide variety of products ranging from LCD screens, pharmaceuticals, paints, cosmetics, cigarette filters, textiles, impact-resistant plastics, high strength tire cord and industrial hoses, detergents, sausage casings, printing inks, explosives, and food products. The application of cellulose specialty products includes high-value specialty papers used for decorative laminates for countertops, automotive air and oil filters, shoe innersoles, battery separators, circuit boards, and filter media for the food industry.

Toward the end of the production process, a pulp dryer uses steam to dry the cellulose pulp into a sheet. Steam condenses in the dryer section giving up latent heat and converts to condensate. The condensate is pulled from the dryer drums by vacuum into a tank and is then returned to the boiler to be used again. It is very expensive to treat and purify water for use as boiler feed water so, every drop of condensate that can be returned to the boiler saves having to treat additional water. This process requires effective controls to collect the condensate and return it to the boiler.

## Process Instrumentation & Analytics

Answers for industry.

**SIEMENS**

## Challenge

This particular paper mill is very old. The condensate tanks are in very cramped quarters and have site glasses mounted on the side of the tanks. These glasses often leak and are easily broken. When one of these site glasses breaks or leaks, it is very difficult to repair due to the danger of hot steam and water. The tank must be shut off and the condensate is lost. The plant had been using a competitor's DP cells to measure the level in these tanks. The cells were mounted behind the tanks and were a challenge to access. Broken valves also made it problematic to isolate the transmitters from the tanks. Calibration was not being done on any kind of routine basis because of the hot steam hazard.

## Solution

The Siemens local representative recommended the plant use the LG200 Guided Wave Radar transmitter to measure level in their condensate tanks. The LG200 instrument is mounted in a magnetic level gage on the side of the condensate tank. The level gage has a closed chamber that is bolted to the side of the tank and a

displacer/float follows the level of the condensate to indicate the level of the condensate. The LG200 unit is mounted in a second chamber and reads the condensate level. The transmitter then sends a 4-20 mA signal back to the Siemens DCS system that controls the condensate pump.

Two problems were solved with this Siemens solution. By using the magnetic level gage, there is not any glass to break, exposing workers to steam and hot water. The Siemens radar level transmitter is installed at the front of the tank. It is much easier to access and can be checked using the HART protocol. Magnetostrictive or Reed Switches were being used, but if the float/displacer fails, so does the transmitter because the float activates those transmitters. The LG200 radar instrument uses a separate chamber and acts alone.

## Benefits

- Cost savings: Because the customer is saving money on reuse of the condensate for the boiler, there is rapid payback for the LG200 level transmitter.

- Time and labor saving: No need for constant repair/replacement of leaking site glasses.
- Improved process reliability: Condensate flow to feedwater tank is much more consistent.
- Improved Accuracy: The LG200 radar level transmitter calibration can be easily verified.
- Customer service: Complete training, mounting, and startup assistance provided by the local representative.



Siemens Industry, Inc.  
3333 Old Milton Parkway  
Alpharetta, GA 30005  
1-800-964-4114

info.us@siemens.com

[www.usa.siemens.com/ia](http://www.usa.siemens.com/ia)

Subject to change without prior notice  
Order No.: PICS-00040-1109  
All rights reserved  
Printed in USA  
©2009 Siemens Industry, Inc.

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.