

CASE STUDY 4 MEAD'S PHENIX CITY MILL



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PURAFIL'S ONGUARD CCT PROVIDES REAL-TIME MONITORING 4 MEAD'S PHENIX CITY MILL



ABOUT MEAD CORPORATION

Mead Corporation, a forest products company with more than \$4 billion in annual sales, is North America's leading producer of coated paper, coated paperboard, consumer and office products. Headquartered in Ohio, Mead has more than 15,000 employees and offices and operations in 32 countries. Mead's coated board division office is headquartered in Phenix City, Alabama. The Phenix City Mill is known for having one of the country's longest paper machines.

THE PROBLEM: CORROSION

Acid gases, such as hydrogen sulfide and sulfur dioxide, are pervasive at pulp and paper mills. Concentrations of these gases are particularly high in the digester area, where wood chips are mixed with a water-caustic slurry and cooked under intense pressure and heat. The sewage treatment/sludge dewatering plant is another source of acid gases. Control rooms, rack rooms, and motor control centers, located throughout the mill, all house electronic computerization for control of these specific processes. Acid gases, if not properly controlled, can corrode sensitive computer components, resulting in computer failure and, ultimately, production downtime.

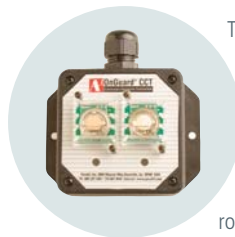
Mead Corporation's Phenix City Mill was aware of the potential problems associated with corrosive, acid gases and was using gas-phase air filtration systems to protect electronic controls. Though these systems seemed effective, the supplier did not offer a reliable, cost-effective means of determining the following:

- Remaining service life of the system media.
- Quality of the air at discharge
- Quality of ambient air inside the room.

Management at Mead's Phenix City Mill began asking questions: *If we can't verify the cleanliness of the air, how do we know when to replace the media? Is the media being replaced too early, or too late? How do we gain better control over corrosion-related issues?* Management called Mead's Central Research division in Dayton, Ohio for help in finding the answers.

PURAFIL PROVIDES THE SOLUTION

The OnGuard® Continuous Corrosion Transmitter (CCT) measures in real-time the amount of corrosion forming on copper and silver surfaces, and transmits this information to the DCS via a 4-20mA output signal. Mead Central Research division informed management at Phenix City Mill about the capabilities of Purafil's new transmitter. With the CCT, Mead's E&I Technician could monitor all of the mill's gas-phase air filtration systems directly from her desk.



The first CCT was installed inside the mill's wastewater treatment plant control room.

As predicted, the CCT detected high levels of corrosion. Several strategies were taken to reduce corrosion levels: Doors and ductwork were sealed to increase room pressure. The HVAC system was balanced. Purafil replaced the media in the existing filtration system with Puracarb®.

Copper/Silver corrosion rates were monitored over a 60-day period from November 28, 2000 to January 29, 2001. As shown in the graph below, the steep initial slope of the copper reactivity rate (blue line) indicated high levels of corrosion. Once the above-mentioned control measures were taken, the copper reactivity rate flattened, indicating that the environment had returned to a class G1. Due to the CCT's success, several other CCTs have been installed. Purafil is the mill's sole supplier of gas-phase air filtration media.

