WINTER 2010

TECUMSETH VISION

SERVING THE PULP AND PAPER INDUSTRY

RUNNABILITY SOLUTIONS FROM TECUMSETH

PRESIDENT'S MESSAGE

Service…something that I hear people say over and over. Yet, when I visit the paper mills I can't help but wonder where are the suppliers who promised this great service!

Specifically, I am speaking to the state of equipment that is installed on a Paper Machine that has not been properly serviced nor updated. As capital is tight for new products, I spend many shutdowns auditing the existing equipment on Paper Machines. These audits can help many paper makers make better use of their existing assets.

These audits are for existing Doctor Blade Systems, Camera Systems, Steam Profilers,Water Sprays & Consistency Transmitters.

For example, most of my paper mills that I visit are using very old doctor blade technology. These are doctor blades that are typically fiber-glass and wear out and are replaced every shutdown. *(continued on page 2)*

Ken Klempner
President

EXFOR 2010

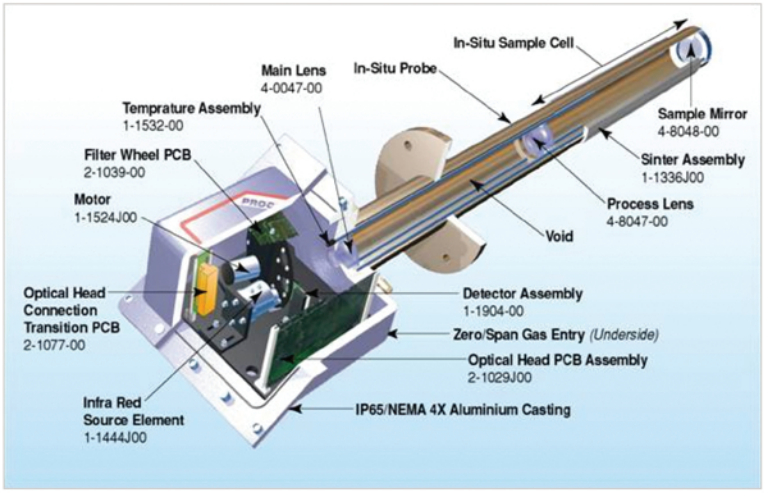
COME SEE US
IN BOOTH 7

PROCAL

Emission monitoring for your biomass boiler conform to Environmental Standards EN14181

A push towards energy efficiency and cost savings has positioned biomass applications at the forefront of industry. With rising energy and production costs, the use of renewable resources to generate energy is critical to ensuring cost effectiveness.

Many Industries are planning on producing electricity and selling it back to the grid to offset some of the high energy costs of production.



mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

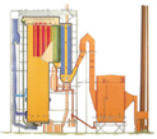
In order to accomplish this many companies are planning on utilizing Bio Fuels as fuel to drive turbines. Bio Fuels are a by-product of some industries like the pulp and paper industry.

Procal Analytics has been designing CEM's monitoring equipment for close to 20 years. The Procal P200 has a unique design which incorporates In-situ technology. By utilizing In-situ design it dramatically reduces the handling of samples which is prevalent in extractive style analyzers. This translates to no sample conditioning and no valves, extractive pumps or filters that typically create high maintenance issues.

In the case of Biomass and/or hog fired boilers, Procal has successfully installed many probes with high quality analyzers that require lessmaintenance than other systems that are available in the industry. All of our Procal analyzers meet EPA, MCERTS and BS EN 14181 approvals.

Our remote access (VPN tunnel) capability has enabled our support personnel as well as plant people to access our systems remotely. All historic data can be downloaded for post processing or you can verify the current status of various gas emissions and even manually calibrate the various gas channels to verify accuracies.

Continuous Measurement of your BioGas Emissions



The new buzz word in the industry is Biomass. It is a way of utilizing renewable resources to generate energy. Many of the North American Pulp and paper facilities have been struggling with rising energy costs. These costs have grown to the point where it is the one of the industries highest cost of production.

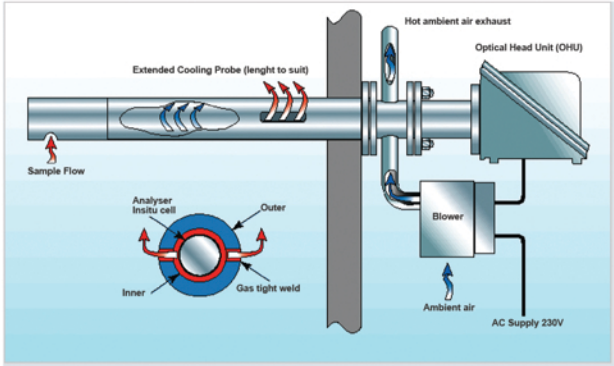
A northern Ontario Paper Mill was one of the first to capitalize on this new green renewable energy resource and they are applying the benefits to their bottom line.

By utilizing Biomass as the fuel source to heat the new boiler they were able to utilize a renewable resource and generate electricity at a reduced cost, which has a direct impact to their cost of operations.

Currently in the Pulp and paper industry energy is one of the highest costs of productions. Therefore the strategy to generate electricity using Bio fuels (which is a buy product of the process) improves Mill efficiencies, costs and is well accepted by the community as being a environmentally 'green' project.

With this project a new fluid bed boiler was built. As part of the bid process we were commissioned to supply a complete sensors and controls that were utilized for the boiler trim package.

For the Continuous Emissions Monitoring System (CEM's) a variety of equipment was installed on the stack after the precipitators. Located on the Stack was a Procal P-200 which was built and calibrated to measure (H_2O, SO_2 , CO, CO_2, NO,NO_2 and a combined NO_x channel) The Procal CEM system is the backbone of the entire system. The Procal utilizes an ACWn software that hosts all the listed measurements plus all the other instruments associated with a complete CEM's package. All measurements are trended and data stored in the ACWn package. In addition to the Procal is a Durag Opacity and Dust analyzer, Yokogawa oxygen and a Yokogawa Velocity probe all integrated into the complete the CEMS system. Combining all these measurements has given the mill all the measurements required to meet their CofA. In addition, this allows them real-time information to ensure that they do not exceed their emission limits; but is also utilized by operations to help in the operation of a fluid bed boiler that is constantly changing because of varying fuel sources. All the above devices are connected to the Procal ACWn software that resides on a PC located in their rack room. The software trends and stores all the data collected from the above devices. The software is connected to the Procal head



A Procal P-200 infrared emissions analyzer installation with either a heater or cooler assembly.

All installations are equipped with either a heater or a cooler to maintain a constant temperature for the probe. A heater was installed to keep it above dew point. The heater will require 120 VAC for operation. In the case of the P-200 it can be use either in horizontal or vertical installations. With the P-200 it operates off 24 VAC and uses an AZU (Auto zero unit) to automatically inject both zero and span gasses into the probe for calibration and verification. The AZU should be installed in close proximity to the probe and beside the test gas bottles. It is important to keep this gas line as short as possible.

PRESIDENT'S MESSAGE *(from page 1)*

I find many Wet end poly blades that are not even doctoring the rolls. Centre Roll Doctor Blades that are changed every 5-6 days; causing unnecessary shutdowns just to change blades. In a few cases, the doctor blades were changed when there was no wear on the blade; just everyone in the habit of changing out blades every shutdown.

At one Southern Ontario Newsprint Machine, we updated their doctor holders with our Flex-18 holder and used a superior type of blade to completely clean up all the dryer can surfaces. In another mill, we just changed the type of doctor material and more than doubled their doctor life and improved their overall press doctoring.

Every mill that I come to visit has a camera system that needs some help. The image quality is terrible, the lighting is poor, the camera shuttering is turned OFF and the operators are suffering with unnecessary poor images. Re-arranged lighting, shuttering enabled, depth of field optimization all are simple low cost actions that dramatically improve the Video Images produced. Our new LED Light fixes a majority of bad camera images.

Press Steam Boxes are notorious for being used at too high (superheat) or too low (wet saturated) temperatures. Also, the pressure in the profilers are usually too high (for more flow) and hence the overall saturation temperature is too far away from the sheet temperature. The distances from the sheet vary across the web for poor results and steam spillage.

In one instance, the sheet temperature before and after the steam profile was the same!!! No increase in sheet temperature means no reduction in viscosity or no water removal… just a waste of steam.

We have been optimizing Steam Profilers operations and even replacing older valves that are not supported anymore to ensure that the asset is fully optimized.

We also have been optimizing both Metso and BTG consistency transmitters in our paper mills as many people don't have the time nor expertise to maintain and optimize these sensors.

Please feel free to contact me for a free audit of your existing installations as I am sure we will be able to find some deficiencies that you can eliminate and hence improve your overall efficiencies.

Ken Klempner
President

Continuous Measurement of your BioGas Emissions

(continued from opposite page)

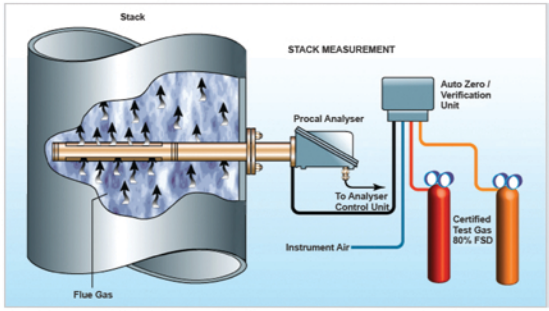
via a RS485 utilizing two twisted pairs. The software is capable of automatically initiating calibrations. In addition all output signals can be transmitted via 4-20 mA analog signals or Modbus.

The ACWn software will allow you to view the active values in the operation page or trend page. The values can be outputted as a concentration or as a mass value as long as we have the mass value. The ACWn software is installed on a stand alone PC. These signals are accessed through the AOU (Auxiliary output unit).

Because the ACWn is network software it is possible to set up remote PC's on the LAN network. A PC was set up in the Co-Gen control room that allows the operators to view all the trends.

In addition to the CEM package measurements for combustion controls were supplied. These measurements were required before the precipitators. For combustion control they required an oxygen analyzer that would do an averaging for combustion control. In the case of the O_2 units, Yokogawa has high temperature units that will function extremely well in this application.

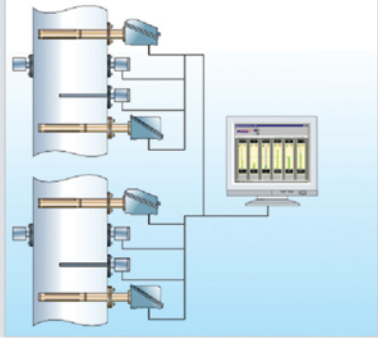
Because O_2 is the primary control function we installed a triple redundancy at this location.
With all this equipment it allows the operations people at the mill to optimize their boiler performance. It also allows them the ability to make adjustment to minimize the Environmental discharge. And lastly it gives them the reporting capability to ensure to the government that they are meeting their CofA and are good environmental industry.



Procal P-200 installation with AZU.
AZU is controlled from the P-200 head and uses 24 VAC to automatically turn the sample valves on and off. All the control and configuration is done by the ACWn software.

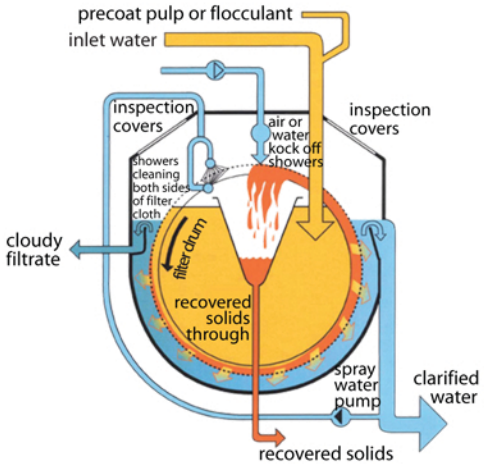
The software resides on a stand alone PC which is currently installed in the Recovery Boiler rack room.

The PC is connected to the Procal Analyser via an RS 485 connection. Each additional analyser is connected by a daisy chain between each instrument. Therefore for this installation 2 pairs of double twisted pairs were installed to the P-200. The allowable distance is 1 km between devices. Located in the field an AOU (auxiliary output unit) was supplied. This unit facilitates the RS-485 connections as well as distributes the analog and digital outputs. Each unit is equipped with 32 digital and 32 analog outputs. With the Modbus module, direct Modbus connections can be made through the AOU unit.

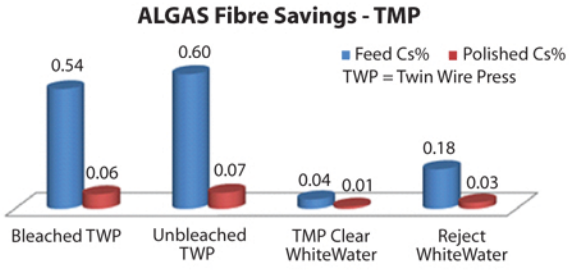


Better Water Management Saves Water, Material & Energy

ALGAS cleans, or polishes water, rendering it clean, clear and ready to be recycled back into the process for re-use.
In many instances, the water will be of a sufficiently high temperature to re-use without requiring any further heating, as the AGLAS unit behaves as both a wastewater/water treatment and an effluent/water treatment at the same time.



ALGAS Microfilters reclaims over 95% of all suspended solids.



ALGAS MICROFILTER ADVANTAGES

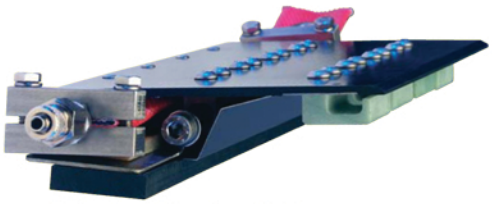
Algas offers a number of advantages over traditional water and effluent treatment systems:

- More clear filtrate available for safe re-use
- High fibre recovery efficiency
- Fast, easy and low maintenance
- Self cleaning
- Simple automatic operation
- Easy installation
- No drop leg required
- Small space requirement
- Flexible concept
- Fast payback time

JOH. CLOUTH®
Quality · Made in Germany · Since 1874

CLOUTH® HS-1

A Revolution in
Doctor Holder Design



Patented Doctor Holder
for all doctor blade materials!

ADVANTAGES of the HS-1 Doctor Holder

- Top plate is carbon fiber and is, therefore, not subject to stress fractures like metal or plastic top plates. It cannot be deformed by impacts or incorrect handling.
- Only one screw (an Allen Key type) needs to be undone to enable the entire top plate to be removed.
- The top plate, complete with the fingers, slides out of the machine. This makes cleaning very easy. It also allows easy access to the tube pocket, so that changing the tube is a breeze.
- There is only a 'single' tube (not the traditional two tubes). This means it is twice as quick and easy to change vs. conventional holders.
- Spring steel seal the tube pocket, which helps keep it clean, which, in turn ensures more even load pressure and better doctoring.
- The rear seal is also spring steel, which provides better and longer sealing than conventional rubber or synthetic seals (which wear fast and allow contamination of the tube pocket).
- The HS-1 can be delivered with either "K" or "DST-E" type fingers (meaning that no new blades with different rivet patterns would be required). As information, the "K" type finger is the default finger if no alternative is specified.

New LED Light replaces traditional Camera system lights on Paper Machines

Paper Mills can now replace their traditional Camera System lights on their paper machine for new LED Lights.

The LED lights are cool to the touch and are low energy but high powered to actually improve your existing camera images. The LED Light requires no Air line feed to keep it cool and operational.

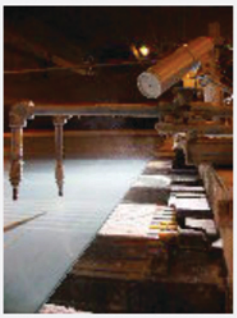
Many Paper Machine Camera systems have lights that use 150-175 Watt bulbs that are very hot and are not producing good camera images.

Our LED light has solved all of these issues. Call us for a demonstration on how we can improve your Paper Machine Camera system lighting and provide you with sharper, clearer images.

ECS *Uptime by Design*
Event Capture Systems, Inc.

New LED Light combined with our 'Pin-hole' Camera Enclosure for the ultimate results

Now with the LED Light and the 'Pin-hole' Camera Enclosure; your existing Paper Machine Camera System will perform better than it ever did!
Both the LED Light and the 'Pin-hole' Camera Enclosure will stay cleaner and in operation longer without any constant intervention to keep them running.



ANNOUNCEMENT

RON NELSON

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Tel: 807.628.3501

Tecumseth Group is pleased to welcome Ron Nelson to its team.
With over 25 years of experience in the Manufacturing industries more specifically the Pulp and Paper, Ron brings solid background knowledge to the group.
Ron will be responsible as the regional director for paper machine products for Joh Clouth doctor systems and ECS camera systems.

WWW.TECUMSETH.COM

Tecumseth website covers two areas of expertise:

Pulp and Paper

Waste Water Treatment

TECUMSETH GROUP

THE TECUMSETH GROUP

PAPER MACHINE AUTOMATION SPECIALISTS PROVIDING RELIABLE PROVEN PRODUCTS AND SERVICES FROM OUR WORLD CLASS SUPPLIERS

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