SUCCESS STORY

Exaquantum Achieves $2 Million in Annual Savings for CENIBRA Pulp & Paper Plant

Location:	**Belo Oriente, Brazil**
Order Date:	**2002**
Completion:	**January 2004**
Industry:	**Pulp & Paper**

CENIBRA®

Executive Summary

The CENIBRA project showcased the Exaquantum Plant Information Management System's (PIMS) ability to bring environmental and financial benefits.

Through this project, CENIBRA achieved remarkable reductions in the following three key areas, yielding the equivalent of $2 million in annual savings:

Chlorine dioxide use
-Reduced 12.8%
-Savings of $1.2 million per year

Fuel consumption
-Down 7,500 tons per month
-Equivalent to $570,000 per year

Downtime
-A six-fold reduction in blockages of the initial digester unit
-Annual production increased by $60,000

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The Challenges and the Solutions

Following an upgrade to the CENTUM CS 3000 Production Control System, leading pulp and paper supplier CENIBRA saw the potential for further savings and efficiencies through tighter control of the production process. Working in conjunction with Yokogawa South America, CENIBRA installed an Exaquantum system that produced savings in three principle areas:

Chlorine dioxide use

Chlorine dioxide (ClO_2) is a necessary but costly chemical additive for the bleaching process. By using Exaquantum to analyze historical data, CENIBRA gained a better understanding of the relationship between the ClO_2 level and pulp quality. As a result, the company has been able to reduce its ClO_2 consumption by 12.8%, yielding annual savings of $1.2 million. Furthermore, this has reduced the release of this toxic substance into the environment.

Fuel consumption

With Exaquantum, CENIBRA has quantified the energy balance of its processes, making it possible to reduce monthly fuel consumption by 7,500 tons for an annual savings of $570,000. This reduction in fuel consumption has had the additional benefit of achieving a significant decrease in CO_2 emissions.

Downtime

Prior to the installation of Exaquantum the plant was experiencing repeated blockages in its initial digester unit, requiring almost the entire production line to be stopped to correct the problem. Based on gathered data and cross-variable analysis, CENIBRA was able to determine the root cause of the problem and reduce blockages by a factor of six, raising the value of annual production by $60,000.

About CENIBRA

Brazil's Celulose Nipo-Brasileira S.A (Cenibra) operates one of the world's largest paper mills. In operation since 1977, this plant has steadily increased production each year, and in 2007 produced a record 1,164,400 tons of eucalyptus bleached pulp.

CENIBRA grows most of its trees on 211,800 hectares of company owned land, and manages these forests as a sustainable resource. Its mill now has three production lines, the third having been added in 2006 for a substantial increase in production capacity.

ISD-SP-R084

YOKOGAWA

About the CENIBRA Project

CENIBRA has long been a user of distributed control systems supplied by Yokogawa South America. When the company needed a PIMS in 2002, Yokogawa's Exaquantum was evaluated and selected by company management based on a requirement for 7,500 tags and 25 concurrent clients. Since its introduction in January 2004, Exaquantum has paid for itself many times over.

In March 2005 CENIBRA expanded its Exaquantum system to 20,000 tags and 41 concurrent users. This increase was required to accommodate utilities and recovery boiler plants, as well as planned increases in production capacity. The key reason for the increased number of tags was the development of additional applications on top of the historian database. The bulk of this increase came from calculated tags, which are needed to generate control assessment key performance indicators (KPIs), production KPIs, and equipment assessment KPIs. Exaquantum has enabled the company to compare the productivity of its five operator shifts over long periods of time. As a result, it now has KPIs that enable each shift to fine-tune its operating procedures and maximize productivity.

The main benefits that Exaquantum has delivered are better management and assessment of process variables that simplifies the decision taking process and improves planning and budget estimation; better information on mass and energy balances that makes possible the evaluation of the magnitude of deviations and losses; better assessment of production line availability that identifies critical equipment and determines where investment should be focused; and better measurement of productivity by shift that clarifies operator training needs and allows the most productive standard procedures to be established.

<System Details>
Control Systems: **CENTUM CS 3000**
System license: **Exaquantum**
Number of tags: **20,000**
Number of users: **41 concurrent**

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YOKOGAWA