

Control Loop Asset Monitoring at Sodra Cell Morrum

Customer needs

The Södra Cell site in Mörrum, Sweden (SCM) produces pulp for a variety of European paper products including newspapers, books, tea bags, and napkins. They also produce green energy for the local municipality in the form of bio-fuels from tree bark and other unusable parts of timber.

The site has AC450 controllers with the latest System 800xA control system. SCM needed a stable and fully integrated control loop performance monitoring system. They tried other stand-alone control loop monitoring systems but found none that met their needs of stability and DCS integration.

ABB's solution

Södra Cell Mörrum turned to ABB to provide a stable and integrated loop performance monitoring solution. ABB supplied Control Loop Asset Monitoring or CLAM. CLAM is a type of asset monitor that is part of the System 800xA Asset Optimization library. An asset monitor is a software component that monitors one or more conditions of an asset and reports the health of the asset to the appropriate party. Asset Optimization is fully integrated into System 800xA. The control loop data is already a part of System 800xA; therefore, SCM does not have to spend engineering time tying data into their Asset Optimization system thereby reducing their implementation costs significantly. An integrated system also lowers training costs and system maintenance costs.

The purpose of the ABB CLAM is to monitor and assess the performance of a control loop in real-time and report significant problems related to the controller and final control element to the end user. The reported condition generates an alarm in System 800xA. Additionally, if a Computerized Maintenance Management System is configured, then it is possible to quickly and efficiently generate a work order for a maintenance request on the control loop. CLAM requires only three basic control loop data points including set point, process value, and the control output. This level of integration provides access to historical data, and other real-time plant information helps the user trace problems and initiate corrective actions in a timely manner.

Customer benefits

Once CLAM was commissioned, SCM immediately realized the value of integrated loop performance monitoring. In addition to CLAM, ABB Service has developed a SCM-specific



asset monitor, PID Loop Sigma, that calculates the Standard Deviation of the control deviation (Process Value minus Set Point). This gives SCM additional information on the health of their most troublesome control loops.

Södra Cell Mörrum classifies their loops based on a criticality scale of A through D with class A loops being the most critical. They rate the loops based on a percentage calculation of the control deviation. The more critical the loop, the tighter the control deviation must be. With the PID Loop Sigma asset monitor, System 800xA creates a direct and instant loop performance score that matches the SCM's rating system. This has proved to be very valuable to SCM. CLAM is then used to obtain a more detailed analysis of problem loops. SCM has approximately 500 Class A loops which they want to monitor. Initially, SCM was monitoring only a small portion of their Class A control loops. ABB has recently extended the maximum CLAM loop count from 100 to 500 loops to accommodate all of SCM's critical loops.

Specific trend displays including PID loop signals, various PID loop load reference signals, and performance value from the PID Loop Sigma asset monitor have been added to the CLAM object types. The CLAM alarms and these specific trend displays are considered to be very valuable for the daily work with PID loop monitoring. With ABB's support, SCM continues to improve working methodologies on the actions to take with information provided by CLAM.

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