

Be “in touch” with your control system

Upgrading the Rumford paper mill steam generator



ABB control systems provide unique solutions for all customer requirements, including the need for “hands-on” operational capability. This case study demonstrates how easily the Procontrol P13 control system can be augmented with the latest HMI and IT technologies.

The Rumford Paper Company owns a paper mill in Maine, USA, which can produce 100 percent of its energy (process steam and electricity) using multiple boilers and a 120 MVA steam turbine generator controlled by ABB’s Procontrol P13 distributed control system (DCS). The control application is based on ABB’s Turboturn control solution for industrial steam turbines, consisting of 3 local buses with four processing modules. The P13 DCS has worked reliably since the day it was installed, but even the most durable systems need maintenance from time to time. In addition, upgrading the old HMI system with a third party solution a few years back did not produce the expected benefits, so the customer asked ABB about maintenance possibilities for the entire system.

To ensure safe, reliable operation now and well into the future, ABB proposed a full scope of P13 on-site upgrade and maintenance services over the course of two years, which commenced in 2012. First, the existing engineering tools were upgraded to Progress 3, ABB’s latest Windows-based engineering and diagnostic solution. Progress 3 is a programming, documentation and service tool specifically designed to upgrade or replace older generation Procontrol engineering tools, enhancing the ability of plant operators to completely maintain the plant control system with all options in fault-finding, trip analysis and even preventive maintenance. In addition, critical electronic components like wet capacitors and fuses were refurbished in all operating modules and spares in stock to prevent premature card failures, and avoid plant unavailability.

This year, the work concluded with the replacement of the outdated 3rd party HMI with ABB’s latest HMI solution, which includes the tailor-made Procontrol P13 connectivity package based on the P13 OPC server. The new HMI is connected redundantly to the P13 system via the reliable and widely-used ModBus protocol and newly installed 70BK06a modules.



Main control room operation panels with integrated touch screens at Rumford Paper Mill.

In planning the HMI upgrade, ABB took care to ensure every customer requirement was fully met. Pre-existing functionality has been freshly implemented according to customer specifications. A unique feature of this solution are two touch screen operator workplaces that have been directly integrated into the main control room operation panels. Problems with the old hardware meant the touch screen workplaces did not work anymore. ABB's flexible HMI solution put these workplaces back in service again, upgraded to the latest touch screen technology.

A particular challenge of the HMI upgrade was the tight schedule – just eight weeks from receiving the purchase order to delivering a solution. ABB's highly skilled and experienced engineering team kept the schedule with no delays. Commissioning was finished in just two days during a scheduled outage with no additional downtime, ensuring minimal loss of production for the customer.

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