



Air Quench System for Steel Rails

The Application

An international steel equipment manufacturer was selected to supply a railroad rail air quench system to a U.S. steel plant. The plant produces premium rail used to handle the lateral forces on curved sections of railroad track. The OEM contracted the electrical control system to Allen-Bradley Drive Systems.

Allen-Bradley Drive Systems asked PCT Engineered Systems to partner with them to provide the MMI and PLC programming needed to supplement their efforts. PCT was the integrator of choice because of our material handling experience, plant floor database programming abilities and drive control expertise.

The PCT Solution

PCT designed, developed, installed and commissioned a feature-rich SCADA application using USDATA's Factory Link package to control the air quenching system. The package was developed in an OS/2 platform. The system included three SCADA nodes communicating over a LAN and the three Allen-Bradley PLC's that controlled the drives and sequencing of the in-line quench systems.

PCT's combination of plant floor process knowledge, extensive software programming and drive control experience made integration of process data acquisition and tracking a reality for the manufacturer.

According to the manufacturer's project manager, "We would like to thank PCT for the seamless support and assistance you have given to us to carry out this project."

This unique air quench system is one of only two of its kind worldwide.

System Features

- Production scheduling and in-process tracking of the rails through the quench process.
- Multiple databases that handle scheduling for every rail entering the quench systems.
- Data logging operations that are easily retrieved after being entered as historical data.
- Mathematical modeling and optimization for controlling and regulating the amount of air pressure and volume of air applied in the quench; as well as temperature control and other parameter controls, all based on the recipe in use.
- More than 20 different quenching recipes, allowing the operator to easily choose the correct setup to produce the different rail characteristics, including metallurgical properties.

Metals

PCT
Engineered Systems, LLC

The Solutions Team

8700 Hillendale Road.
Davenport, IA 52806
563.285.7411
FAX 563.285.7433
www.teampct.com

