

Chemical Producer Waste Gas Boiler

Company Profile

Chemical manufacturer supplying the coatings, construction, oil & gas, automotive, wind, and transportation sectors.

Challenge

Waste hydrogen with trace amounts of organic chemicals are generated by two plant processes. These are used to fire a boiler to generate steam for process heating. The boilers' controls and hardware no longer met code, the start up process was entirely manual, and as process outputs changed the boiler controls required manual adjustment to keep running and fire efficiently.

Solution

The existing system was carefully reviewed and documented, additional safety components were specified, a new control system was designed, built, installed, and commissioned. This new system meets all applicable codes and allows start up with minimal operator intervention. Major components/systems supplied include air and gas flow conditioners and meters; pressure transmitters; listed safety shut off valves; oxygen probe; flame scanners and monitors for burner control; PLC for combustion control; and display with customer programming to aid in operation and trouble shooting.

Results

The new system allows the operator to start and stop the boiler with a single button. Individual waste gas streams fed to the boiler can be started and stopped as the processes are started and stopped in the plant. The discharge oxygen level is controlled to a minimum value to ensure both complete combustion and maximum efficiency. Remote access into the operator interfaces web server by the plants SCADA system allows monitoring throughout the facility and logging of key variables to comply with environmental requirements.

