



Process Control & Engineering, Inc.
Monarch Design Company

Monitoring and Control Systems

PCE Monarch provides solutions for real-time monitoring and control of industrial processes and facilities. Our control experience covers new systems as well as upgrades to existing systems. We can provide PLC and/or PC based monitoring and control systems. Our ability to provide these as turn-key solutions sets us apart from our competition.

We work on a variety of PLC platforms as well as Human Machine Interface (HMI) software packages.

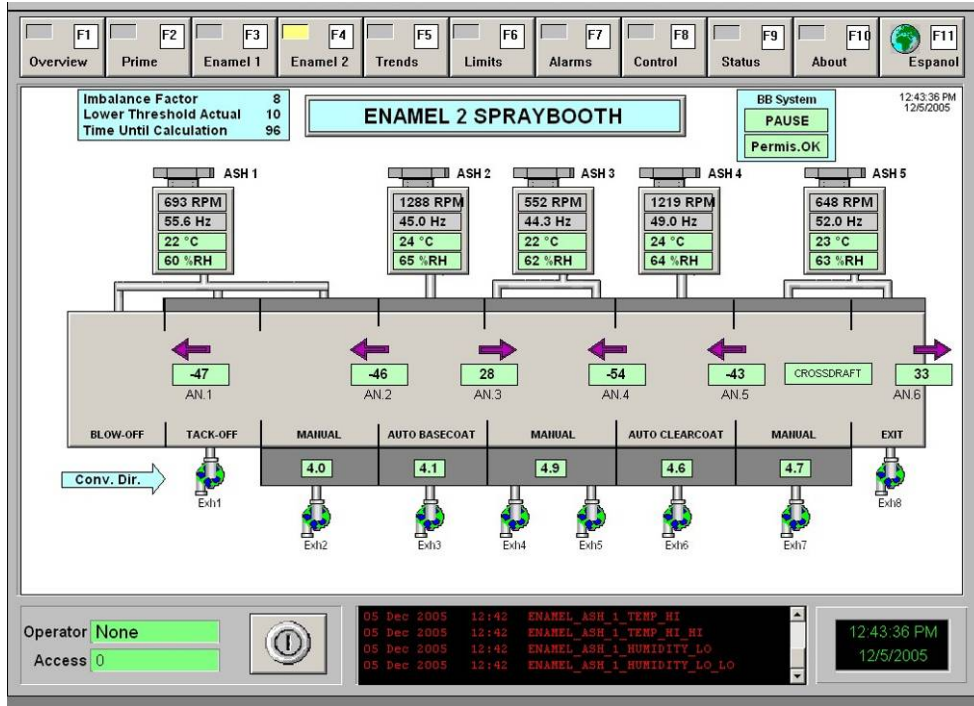
Our Monitoring and Control System experience includes:

- Monitoring and control systems for process parameters for paint sprabooths, ovens, paint delivery systems, etc. This includes instrumentation and control systems for process parameters such as air velocities, humidity, temperature, viscosity, fluid flows, fan parameters, and energy usage.
- Real-time airflow control systems for paint spraybooths with our proprietary, high-accuracy instrumentation
- Volatile Organic Compound (VOC) emission control Systems.
- Flame Safety equipment for burners.
- Facility HVAC monitoring and scheduling.
- Facility production, quality, throughput, downtime monitoring.

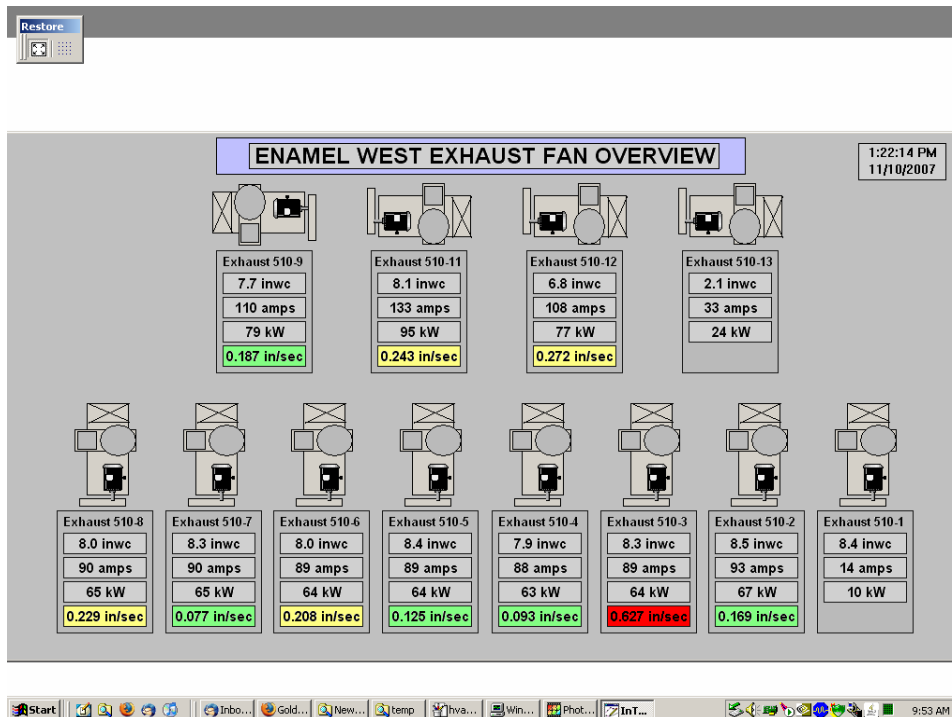
As a control system integrator, we apply our twenty five years of process experience to identify the parameters to monitor, select right instrumentation for monitoring of these parameters and implement effective control strategies to maintain these parameters within specifications. Furthermore, we apply the same process experience to analyze the data gathered and archived by the HMI system, to design predictive and preventive maintenance schedules.

Anticipating the necessity for a visual tool for training of the workforce and maintenance of the machinery, we launched a new product, **Visual Training and Maintenance Assistant. VTMA** that harnesses our knowledge of equipment, processes, and the computer technology that allows real-time, 3-dimensinal simulation/animation. We propose to augment functionality of the existing HMI systems by addition of **VTMA** as a tool for training and maintenance.

Monitoring and Control Systems for Process and Facility Parameters



Paint Spraybooth Monitoring System



Equipment Parameter (vibration, pressure, kW) Monitoring System

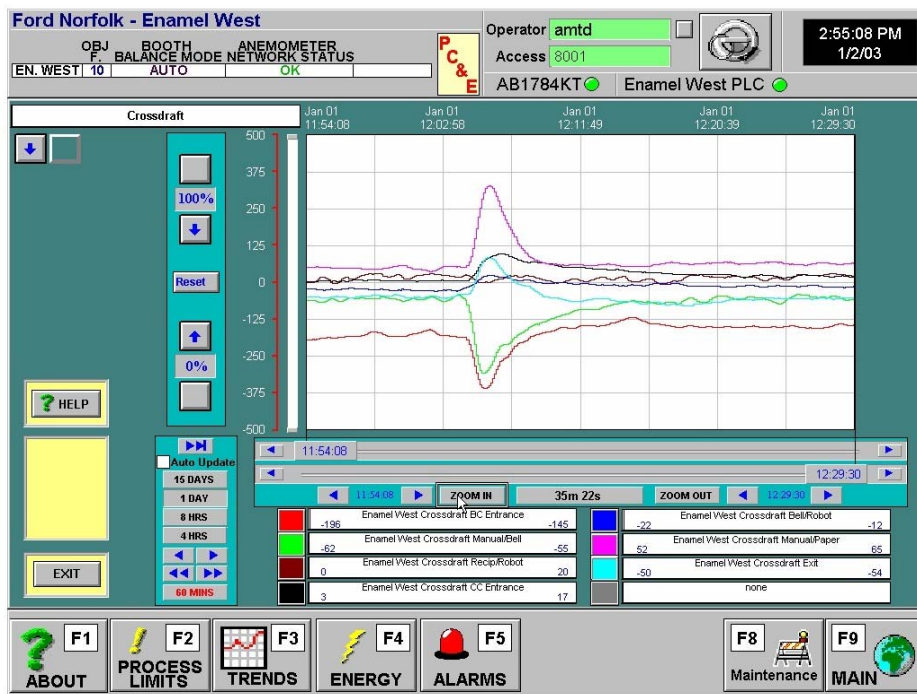


Process Control & Engineering, Inc.
Monarch Design Company

Real-time Airflow Control System for Paint Booth.



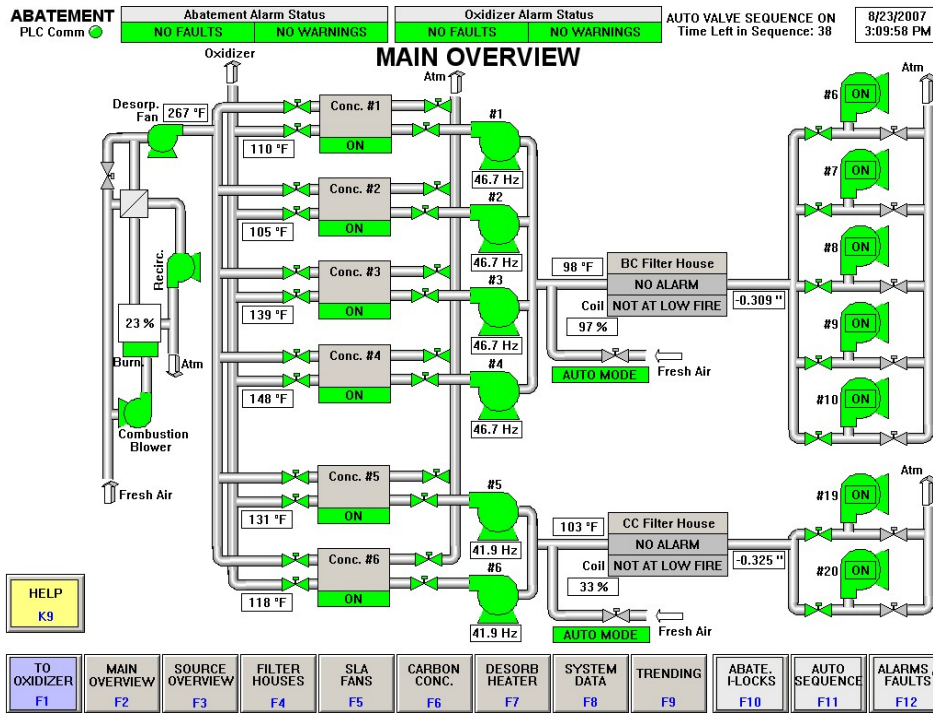
Proprietary, high-accuracy Ultrasonic airflow sensor installed in a paint booth



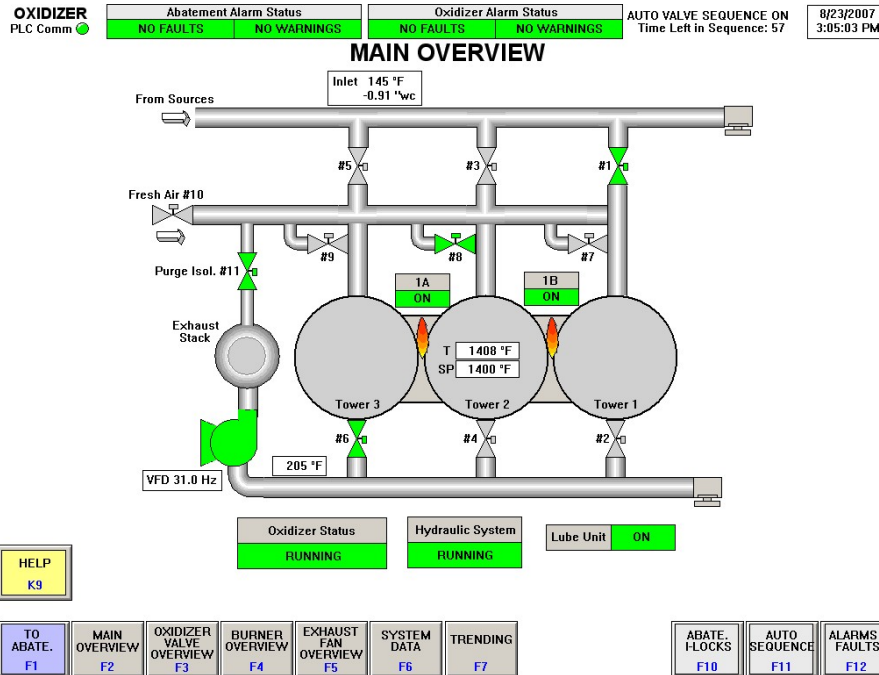
Fast Response of the Paint Booth Balance Control System to Disturbances

1091 Centre Rd., Suite 160 Auburn Hills, MI 48326
Phone 248-340-1888. Fax 248-340-1848 www.pcemonarch.com
MBE CERTIFIED – ISO 9001:2000 REGISTERED

Human Machine Interface (HMI) for VOC Emission Control System



Abatement System Overview



Regenerative Thermal Oxidizer Main Overview



Process Control & Engineering, Inc.
Monarch Design Company

Flame Safety Equipment for Burners



Typical Gas Train, with Flame Safety Upgrade