

Case History 8 Process Improvement Project – Industrial Paint System



Process Ovens: All Process Ovens - Elpo, Prime and Color
Energy Savings Opportunities:

Air Flow Reduction: the process ovens were modified to conform to the current specification for ventilation. Fresh air and exhaust rates were reduced and ovens were re-balanced.

Increased Fresh Air Preheat: the fresh air heat exchanger performance was improved by minimizing bypass leakage.

Shutdown of Prime Oven Zone 10: With the improved oven cure profile it was possible to shut down the last zone.

Oven "At Rest Mode": A controls upgrade was added to drive all oven burners to low fire during non-production times at night to save gas.

How Implemented: Plant forces worked with sub-contract engineering forces to adjust dampers, re-sheave fans, modify burners and install oven controls upgrades.

Air Flow Reduction: Oven exhaust flow from four ovens was reduced from 108,594 SCFM to 76,824 SCFM.

Increased Preheat: Incinerator stack temperature was reduced overall by 7% due to increased heat exchange to incoming fresh air.

"At Rest" Mode: Incinerator and oven zone burners were set back to new low set points during non-production time.

Implementation Cost: \$216,505.
Energy Savings Achieved: \$1,487,249 annually.