Customer : **Pharmaceutical company**
Product group : **Instrumentation, Process Control**
Market : **Food and pharma**
Application : **Electronic touch screen control system**
Savings : **$ 18,000 annually**

INDUSTRIAL CONTROLS INSTALLS CONTROL SYSTEM AND IMPROVES EFFICIENCY BOILER ROOM

Boiler energy savings with Fuel/Air ratio controls

CUSTOMER PROFILE

This customer is the world's third-largest pharmaceutical medical device manufacturer specializing in cardiac and vascular technologies, restorative therapies and services, and advanced diabetes management solutions.

CHALLENGE

This customer used multiple boilers to supply building heat, hot water, autoclave steam, and process heating steam. The cost of running and maintaining these boilers was considered overhead, so any reduction in cost would directly improve profits. Traditionally, boiler controls make use of a jack-shaft system in which the fuel valves and air dampers are linked together mechanically, forcing a linear fuel-to-air ratio throughout the demand curve. Peak boiler efficiency, however, is not a linear relationship. Therefore, the boiler runs either too "Rich" or too "Lean", which is inefficient and results in wasting valuable energy. Additionally, the boilers can be fuelled by either natural gas or by oil. The customer often changes fuels, which requires a very time consuming process to adjust the mechanical system, adding to operating cost.

SOLUTION

Industrial Controls provides a Honeywell Control Links parallel positioning system, which replaces the mechanical linkage system and allows for modelling a fuel-to-air ratio curve to match the peak boiler efficiency curve. The mechanical linkages are replaced by individual servo actuators for each of the fuel valves and air damper. The electronic touch screen controller is programmed to control each of these servo actuators independently at every point in the demand curve allowing the fuel-to-air ratio to be optimized during any steam demand condition. It also adjusts automatically with a change in fuel occurs.

SAVINGS

- $ 18,000 annually

OTHER BENEFITS

- Reduced fuel usage (6-8% of annual fuel used)
- "One-touch" fuel changeover procedure, reducing operations personnel time required to adjust the system when change from gas to oil is required
- Reduced exhaust stack temperature, an environmental benefit
- Reduced emissions stemming from efficient combustion, an environmental benefit

FURTHER COMMENTS

The total investment in this project was $ 45,000 and took 8 weeks to complete all three boilers. The customer has reported that boiler room efficiency has improved greatly. Annual energy savings is estimated at $ 18,000 per year, and additional savings in labour were reported for the several hours that were required for adjusting the traditional jack shafts when a change in fuel occurred.

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