

CLIENT Leggett and Platt Aluminum

INDUSTRY Manufacturing

TECHNOLOGY Energy Management

THE OPPORTUNITY

Leggett and Platt's aluminum group is the leading independent producer of non-automotive die castings in North America. Major customers include manufacturers of gas barbeque grills, electrical and lighting equipment, telecommunications and electronic equipment, diesel and small gasoline engines, and other industrial products that incorporate aluminum, zinc and magnesium die cast components

Leggett operates several small die casting plants. Aluminum is melted for casting in large furnaces that are heated with natural gas. One plant was spending over \$1.2

million each year for natural gas. Natural gas was fed to the furnaces in only two modes: high flow and low flow. There was feedback available from the furnace to optimize the air burn mixture but no historical statistics to perform any concrete analysis.

Furnace operators would manually make adjustments to the gas flow and mixture depending on the temperature and amount of the aluminum being fed into the furnace. However, there was no way to track these changes, and no way to determine if the changes improved the melting process or the final product.

THE PROBLEM

Management did not consider installing new furnaces to be economically feasible. (In fact, they had no way to compare furnace operating costs in order to perform decision analysis.)

They could not assign energy costs to their aluminum products, but they knew they were wasting significant energy. They had to reduce their gas consumption

but could not be certain how to accomplish it without the right analytical tools.

They needed a way to maximize the use of their existing equipment and gather operational statistics that would help them make future design, operations and purchasing decisions.

THE SOLUTION

Cyte worked with Leggett's VP of Melting to create new furnace control

boxes using less expensive off-the-shelf products. These products communicated

to Agency™, Cyte's application switching server via Leggett's wireless network. Agency™ was able to ensure that all the old and new equipment worked together reliably and accurately, while providing real-time optimization tools.

Another Cyte product, OverCyte™, was used to display all furnace operations on

everyone's desktop computer and on the WEB, ensuring operators, foremen and management had identical information available at all times.

OverCyte produces historical graphs of each furnaces input and output, and tracks all changes; manual or automatic.

BENEFITS

The historical burn and mixture statistics can be compared to the aluminum usage to determine the energy cost of each product. They can now tie their greatest single manufacturing cost to their products.

These statistics also provide feedback to optimize their operations. For example, they were able to determine the best temperature and gas flow rate to

economically maintain a furnace in idle mode, reducing energy costs.

The new OverCyte GUI allows the VP of Melting to access and operate the furnaces remotely from any Internet access in the world. All furnaces are now watched and managed for consistent operation producing better, less expensive aluminum product.