
Client
Ducommun AeroStructures designs, engineers and manufactures some of the largest, most complex contoured aerostructure components in the aerospace industry. Their integrated processes include stretch-forming, thermal-forming, precision fabrication, machining, finishing processes, and integration of components into subassemblies. Ducommun’s Coxsackie, NY plant works extensively with Titanium sheet.

Opportunity Areas
Ducommun utilizes high temperature during the processing of titanium parts in several key manufacturing areas. The LE2 Assessment focused on two opportunities not currently being addressed by other programs: the Hot Sizing Presses and the Hot Caustic Soda Wash. Since the Hot Sizing Presses operate at temperatures upward of 1400° Fahrenheit and the Hot Caustic Soda Wash tanks operate in the range of 450° F, the assessment team focused on energy reduction in these operations.

Objectives
Identify energy and environmental impact reduction opportunities within Ducommun’s Coxsackie, NY plant. Apply innovative or underutilized technologies to achieve measurable reductions in one or more of these areas.

Work Performed
Electrical use data was collected on Hot Sizing Press heaters during normal daily operation. An innovative flexible insulation sock was identified as a potential means of reducing heat loss and was applied to one of the Presses. Electrical use data was again collected with the insulation in place. Electricity consumption was compared and savings calculated.

Electricity use was calculated for the Hot Soda Wash Tank. Concepts for improved heat transfer and for automated tank lids were recommended and electricity savings were estimated.

Results
By implementing the recommended improvements, the following annual reductions are estimated:

- $9,300 in electricity costs and 133,000 kWh of electricity on the Hot Sizing Presses
- $6,346 in electricity costs and 63,700 kWh of electricity on the Hot Caustic Soda Wash Tank
- Un-quantified reduction in room ventilation requirements due to reduced in plant vapor release

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