

DIRECT ASSISTANCE PROGRAM



CASE STUDY

NYSP21 Evaluates Water Use Reduction Opportunities for Ducommun Aerostructures

Ducommun Aerostructures (Ducommun) is an aerospace company located in Coxsackie, New York that is a global provider of innovative manufacturing solutions for customers in the aerospace, defense and industrial markets. Ducommun is structured to leverage a full spectrum of capabilities through common, company wide processes and value-added services like new product introduction, supply chain strategies, and program management that create value for customers and to facilitate ease of doing business.

Challenge

As part of Ducommun's operation, waterjet technology is used to cut titanium sheet metal and other difficult to cut metals. Parts are then cleaned and treated in one of three lines and a fourth line is used for rinsing. The water used for rinsing is fed through a reverse osmosis filtration system in order to obtain high quality water for the waterjet technology. The water used in this process typically generates large amounts of water that is then discharged to the sewer. Additionally, the water can only be used once due to metal particles and shattered garnet that enter the water stream when cutting the sheet metal. This has led to Ducommun using approximately 5.4 million gallons of water in 2017 at a cost of \$70,000. As a result, Ducommun wanted to identify cost effective ways to reduce the amount of water used at their facility.

Solution

The New York State Pollution Prevention Institute (NYSP21) collaborated with Ducommun to evaluate and identify opportunities for reducing the amount of water utilized within key areas of their operation. The work performed included the completion of a baseline analysis of the process to better understand the amounts of water used in the various processes, researching methods to reduce or reuse water within the facility, and an economic analysis to determine the viability of the proposed water reduction methods.

Results

NYSP21 identified several options that could potentially benefit Ducommun's current operation. One option would be to increase the efficiency of the filter systems with regular maintenance and swap out high flow nozzles for low flow versions that would still clean the parts just as effectively. Ducommun could potentially see a reduction in water use of 523,800 gallons per year and savings of \$6,900 per year by implementing these two options together. A second option would be to install an additional reverse osmosis system to generate usable water from the treated wastewater typically sent to the sewer. If this approach was taken, a reduction in water use by 1.54 million gallons per year and a savings of \$20,000 per year could be achieved. However, additional studies would be needed to determine the actual feasibility of this option, before installing this system.

CHALLENGE

- Ducommun wanted to identify cost effective ways to reduce the amount of water used at their facility

SOLUTION

- NYSP21 evaluated and identified opportunities for reducing the amount of water utilized within key areas of Ducommun's operation

RESULTS

- NYSP21 identified several options that could benefit Ducommun's current operation



NYSP21 PARTNERS



New York Manufacturing Extension Partnership

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