

# DIRECT ASSISTANCE PROGRAM



## CASE STUDY

### High Pressure Shower Pump VFD Drive Implementation Assistance

Potsdam Specialty Paper Inc. (PSPI) is a North American specialty paper mill located in Potsdam, New York. PSPI is recognized as a worldwide leader in research, development and manufacturing of specialty latex and other saturated base papers. They are a leader in creping for tape base and medical paper applications, operating under ISO 9001:2008 certification. PSPI provides comprehensive solutions for demanding applications in book cover, clean room, wallpaper base, wallboard, and facer applications.

#### CHALLENGE

PSPI has been focusing on creating products that conserve natural resources, developing manufacturing processes that eliminate waste, and effectively balancing the increasing demand for renewable energy sources with the absolute need to protect our forests. PSPI's comprehensive green technology approach encompasses extensive wastewater treatment, energy efficiency programs for power and lighting optimization, and collaboration with industrial waste providers to utilize scrap industrial waste of its products.

Over the past 10 years, PSPI has participated in the New York State Energy Research and Development Authority (NYSERDA) FlexTech Program in order to identify and implement cost effective and energy efficient opportunities at the facility. Prior to this project, PSPI's high pressure shower pumps ran at a fixed speed. PSPI used a pressure relief valve to maintain a set header pressure in the Press Section and Fourdrinier showers. The water passing through the pressure relief valve was sent to an open holding tank and used for other processes within the plant. This project was not expected to achieve overall water use reduction; instead, it was expected to reduce energy use by isolating pressurization only for the Fourdrinier showers. As part of a FlexTech Energy Assessment, an opportunity was identified to replace the high pressure shower pumps and fan motors with variable speed drives and inverter duty motors.

To reduce electricity consumption during all production hours, the New York State Pollution Prevention Institute (NYSP21) at Rochester Institute of Technology (RIT) provided implementation assistance to PSPI to install an inverter duty motor, a variable frequency drive (VFD), and a new pump to supply PSPI's high pressure showers.

#### SOLUTIONS

NYSP21 agreed to partner with PSPI to help with the installation of an inverter duty motor, a variable frequency drive (VFD) and a new pump to supply PSPI's high pressure showers. The objective of this project was to encourage PSPI to install the energy saving technology in their plant. After the new equipment was installed in 2015, NYSP21 visited PSPI's paper mill to measure the power consumption and water flow of the new variable speed pump and the previously used constant speed pump. The implementation included an inverter duty motor, a VFD and a new pump to replace one existing constant speed motor, pump and pressure relief valve.

#### CHALLENGE

- PSPI is looking to reduce their electricity consumption during all production hours
- The New York State Pollution Prevention Institute (NYSP21) at Rochester Institute of Technology (RIT) agreed to provide assistance to PSPI to install an inverter duty motor, a variable frequency drive (VFD), and a new pump to supply PSPI's high pressure showers

#### SOLUTIONS

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#### RESULTS

- 158,148 kWh in annual energy savings was calculated resulting in a projected annual energy costs savings of \$7,100
- With NYSP21's assistance the total installation cost was reduced to \$28,334 resulting in a payback of four years

## TESTIMONIAL

### RESULTS

Based on information collected in the December 2015 visit, 158,148 kWh in annual energy savings was calculated resulting in a projected annual energy costs savings of \$7,100. The installation costs were \$43,334 with installation of additional service valves that allow isolation of either pump for maintenance and repair. With NYSP2I's assistance the total installation cost was reduced to \$28,334 resulting in a payback of four years. NYSP2I will follow up annually for a period of three years to collect performance use data.

“Our partnership with NYSP21 provided us with support that focused on installing an energy savings technology in our plant. NYSP21's assistance reinforced our company's focus on conserving natural resources, developing manufacturing processes and effectively balancing the increased demand for renewable energy sources.”

– Potsdam Specialty Paper, Inc.

## NYSP2I PARTNERS

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**University at Buffalo**  
*The State University of New York*

**Clarkson**  
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10 Regional Technology Development Centers

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