

MECO
smart **ANALYTICS**[®]

COMBINING SMART
TECHNOLOGY WITH MULTIPLE
MACHINE INSTALLATIONS TO
IMPROVE EFFICIENCY AND
REDUCE ENERGY COSTS



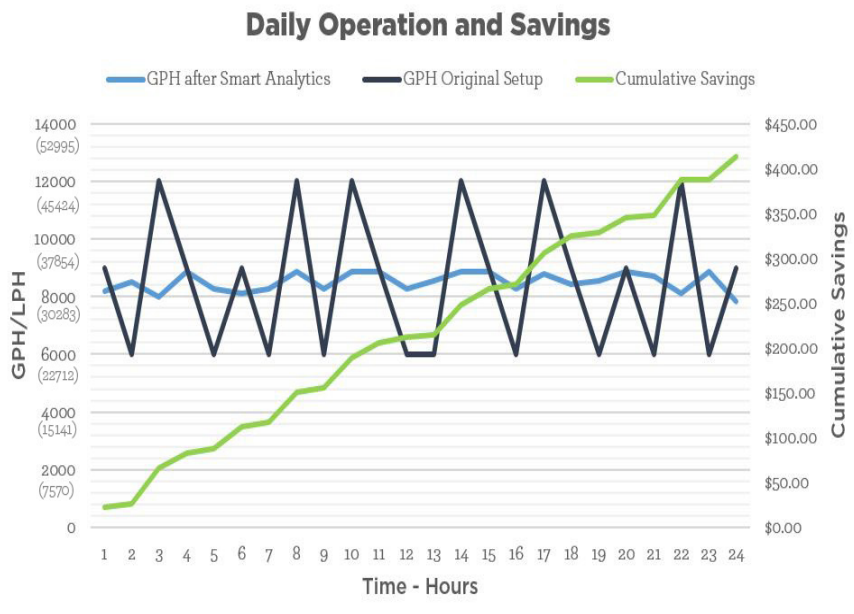
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MECO vapor compression machines are commonly used to produce distilled water in a variety of applications. In this case, multiple vapor compression machines were installed within a large industrial facility for the production of high-purity water. As is typical in facilities with multiple machines, the machines are turned on and off as required to meet production demand and maintain storage tank levels. In this particular case, two machines producing 3,000 gallons per hour (11,356 litres per hour) each were run 100 percent of the time, while two identical machines were turned on and off to make up additional capacity as required. The production demand was such that the on-off cycle of the latter two machines exceeded 16 times a day between the two of them. The average production demand of the facility is approximately 204,000 gallons per day (772,224 litres per day).

MECO *smartANALYTICS*® provided data such that MECO engineers had an understanding of the client's operating profile, including the production capacity of the machines and the number of starts and stops. MECO communicated best practices and deployed a service engineer to modify the program and operating parameters of the distillers. All four machines now operate at 75 percent capacity to meet production demand without intermittently starting and stopping two of the machines. As a result, the client is saving 50 percent on the electricity consumption given that the power consumption is disproportionate to the capacity of the machines. The dollar savings are greater than, \$400 per day, or approximately \$135,000 per year, at \$0.12 per kilowatt-hour. In addition, reliability and life expectancy are increased with four machines operating at 75 percent load rather than the former operating profile, due to the drastically reduced number of starts and stops on the machines.



ENERGY SAVINGS WITH MSA



Running all units at fractional load in lieu of starting and stopping to make up demand saves 50 percent on energy with the same total output.

The operating costs of a water purification plant are significant and many times greater than the initial capital costs over the life of the plant. With 90 years of experience in designing, building and operating a variety of systems for a multitude of clients all over the world, MECO has expert knowledge on what it takes to run these plants most efficiently. MECO *smartANALYTICS*[®] provides a means of having MECO’s expertise intimately involved in the operation of your water plant.

MECO *smartANALYTICS*[®] is a data profiling and analytics tool that connects and analyzes the components of a MECO water purification plant to improve operational efficiency and reliability. The data collected is profiled against our operating standard design and other plants in the field. MECO *smartANALYTICS*[®] enables MECO to ensure that each plant is operating in the most optimal and cost-advantageous manner.