

FOCUS ON INDUSTRY



BALL CORPORATION

Compressor Efficiency Project

BACKGROUND

Ball Corporation is a supplier of high-quality metal and plastic packaging for beverage, food, and household products customers, and of aerospace and other technologies and services, primarily for the U.S. government. Ball Metal Container Packaging Division operates twenty manufacturing plants in North America and is the leader in the domestic beverage container industry.

Ball Corporation's Saratoga Springs, NY, manufacturing facility operates four high speed manufacturing lines and produces 3.4 billion 12 ounce cans annually. The plant is 290,000 square feet, has 215 employees and operates 24/7. The plant electrical usage for 2009 was 41,846,000 kWh, 26% of which powered compressed air systems.

OBJECTIVES

Ball Corporation is committed to reducing energy consumption and increasing sustainability initiatives throughout the organization. Partnerships with the New York State Energy Research and Development Authority (NYSERDA) are integral to achieving these goals in New York State. The Saratoga Springs plant identified several opportunities to reduce demand on the compressed air systems, which will result in electrical energy reduction.

"The programs are helping us compete. We would never have thought about doing anything like this 10 years ago."

**- Steve DiLoreto,
Plant Manager
Ball Corporation**

RECOMMENDATIONS

Efforts to reduce demand on the plant's high pressure compressed air system (90PSI) have been successful, reducing demand from 3,000 SCFM to 2,350 SCFM. The Joy TA35 centrifugal compressor has reached minimum flow, thus any further demand reduction will result in the blow off valve opening and negating further energy savings.

A project to re-aero the compressor and reduce its capacity was initiated with NYSERDA through the Industrial and Process Efficiency (IPE) Program. The compressor was reduced from 900HP to 550HP and the air end was redesigned to operate at 2,200 SCFM at 100 PSI. This project improved the efficiency of the compressor by 10% and shifted the operating range to match the plant's current demand. The new minimum flow design point is 1,800 SCFM, allowing further compressed air demand reduction action. The project's target was to reduce electrical demand by 123kW.

RESULTS

Cameron Compressor redesigned the air end and installed the new components and motor as planned. Post project energy measurement confirmed 117kW reduction in electrical demand for the high pressure air system, which is on target for the project. Further savings are expected as future steps to reduce demand are taken. The project cost was \$160,297 and the resulting annual energy saving was 963,600 kWh. Additionally, NYSERDA's IPE program provided an incentive of \$80,148.46 for the installation of the project.

Contact us today at **1.866.NYSERDA** or visit our website at **www.nyserda.org/ipe** for more information on any of the information listed above, or e-mail NYSERDA at **IPEOutreach@nyserda.org**.

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