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Washburn Iron Works, an employee-owned metal casting business, discovered that implementing energy efficiency improvements can produce unintended, but very important benefits. In this case, the company's plant personnel participated in upgrading the company's compressed air system. During this hands-on process, they learned how to operate and maintain the system properly, which will yield energy saving benefits for years to come.

"We've been interested in energy efficiency for a long time," said Dave Pearson, vice-president of Washburn Iron Works. "It's one more way to reduce our operating costs." The company has worked closely with Xcel Energy, its local utility, for many years.

Washburn Iron Works, located in Washburn, has operated for over 25 years; it replaced another foundry that existed at this location. Today, the company makes quality gray and ductile iron castings for many different uses. The company employs approximately 35 people and operates two shifts.

Focus on Energy's Dean Laube, an Energy Advisor based in Eau Claire, contacted Washburn Iron Works' executives, Raelyn and Dave Pearson and scheduled a visit. They walked through the facility and identified several potential energy efficiency improvements. After that visit, Dean Laube completed an energy survey that identified eight specific areas where energy savings could be realized. The information gathered was compiled into an energy management plan reference binder. Working collaboratively, the Pearsons and Dean Laube prioritized these eight projects and identified the ones that could be undertaken immediately.

Dave Pearson decided to focus Washburn Iron Works' initial energy saving efforts on compressed air usage. "We use compressed air throughout our operation," he noted. "Our system runs air tools in the cleaning room, pneumatic molding machines and air hoists." The existing compressed air system was over 25 years old and had been updated and expanded over the years. It represented an excellent energy efficiency opportunity.

Focus on Energy awarded Washburn Iron Works a Feasibility Study Grant to help the company conduct a detailed study of its compressed air system. This study was initiated by John Henry Foster Minnesota, a Focus on Energy Program Ally. The study identified several compressed air efficiency projects, including detecting and repairing leaks, replacing the flow control valve and adding volume to the compressed air storage system.

After reviewing the feasibility study findings, Washburn Iron Works decided to proceed with the compressed air upgrades. The company applied for and was awarded a Focus on Energy Implementation Grant, which helped offset the costs of upgrading the compressed air system.

The company's staff became directly involved in making the compressed air system upgrades, including adding two new tanks, installing new plumbing and mounting the control valve. "The only thing our staff didn't do was complete the final hookup on the control valve," said Dave Pearson.

During the installation process, the company's employees learned ways to better manage the compressed air system's operations. In fact, these lessons came in handy recently.

"During the second shift, workers noticed that the compressor wasn't keeping up with the molding machines," said Dave Pearson. "The pressure regulator gauges weren't at 90 psi, their usual reading. So, the staff did a quick search and discovered that a hose on the cylinder in our cleaning department was just blowing air. In a few minutes, they were able to track down the leak, find it and fix it." The workers' quick action improved the compressor's performance and saved energy.

The system upgrade was completed in November 2002. This project—the compressed air system leak repair, pressure reduction and storage control—are anticipated to save Washburn Iron Works over 120,000 kilowatt hours (kWh) each year and reduce the company's annual energy costs by over \$8,000.

In addition to compressed air upgrades, the original energy survey identified a T-8 lighting retrofit in the conference and drafting areas that received high priority. The company installed this energy efficient lighting in the drafting area on its own, without financial assistance from Focus on Energy. The lighting retrofit will save almost 1,500 kWh annually.

Dave Pearson is already looking forward to the next energy efficiency projects on his to-do list. "We've got lots of projects left to do," he said. "We just need the time to get them all done."