Energy Industries Of Ohio

Regional Industrial Energy Efficiency Success Story – Clow Water Systems

Clow Water Systems produces ductile iron pipe and fittings in Coshocton, Ohio. After more than 90 years of servicing customers, Clow Water Systems is one of the United States' premiere manufacturers of iron pipe and fittings in the waterworks industry. Pipe sizes range from 4-in to 36-in.

In 2010 the company produced over 100,000 tons of pipe and fittings. Products are shipped domestically and internationally . The facility has been expanded several times, since its inception in 1910, and continues to be improved through capital expenditures. These expenditures enable Clow to provide pipe, fittings and specialty pipe to customers on-demand.

How Pipes are made at Clow

Scrap steel is delivered on a just-in-time basis. Materials are charged to a cupola to produce molten iron. The pipes are centrifugally-cast in molds. Fittings are produced in a green sand foundry. Once cast, the pipes are annealed in a gas-fired oven. After annealing the pipe is tested, lined and painted.

Energy Consumption at Clow

Clow's overall energy use in 2008 was 900 billion BTU. Energy sources include natural gas, electricity and coke. In the interest of becoming more energy efficient, the position of energy manager was created at Clow in Feb, 2009.

For more information:

Richard W. Loth
Energy Manager
Clow Water Systems
2266 S 6th St
Coshocton, OH

Richard.Loth@clowwater.com

Larry Boyd
Energy Industries of Ohio
P.O. Box 31274
Independence, OH 44131
boyd@energyinohio.org

CLOW Water Systems Company

Energy Industries Of Ohio

Save ENERGY Now

Ohio Department of Development

Tony Sutor
77 S. High St., 26th Floor
P.O. Box 1001
Columbus, OH 43216-1001
(614) 466-8463
Anthony.Sutor@development.ohio.gov

For more information:

Larry Boyd
Energy Industries of Ohio
P.O. Box 31274
Independence, OH 44131
boyd@energyinohio.org

Evolution of Energy Management Program at Clow Water Systems

Clow has benefitted from two US Department of Energy assessments since 2009. Nearly $900,000 in energy savings have been identified by these two audits.

- A ***Process Heating Assessment*** was performed by Energy Industries of Ohio in April 2009.
- The anneal oven was targeted for an audit since it consumes more than half of Clow's natural gas.
- $640,000 worth of annualized natural gas saving opportunities were identified.
- Saving objectives were grouped into short term, intermediate term and long term.

Short Term Objectives Completed July 2009

- Structural changes to the oven entrance.
- Improved oven zone separation using curtains
- Increased use of ceramic fiber insulation
- Operational modifications

Medium Term Objectives to be Completed July 2011

- Install burners in the high heat zone that preheat combustion air.
- Modify oven flues to help control oven pressure.

Long Term Objectives

- Redirect waste heat from the oven to other processes in the foundry

A ***Compressed Air Assessment*** was performed in Dec 2010 by the Industrial Assessment Center, University of Dayton. The air compressor system was chosen for an audit since it consumes an estimated 20% of the electrical energy. Clow has nine compressors distributed throughout the factory. Total HP is 2300. $250,000 of energy savings opportunities were identified in the survey.

$187,000 of the total electrical savings will be achieved by installing electronic controllers for staging compressor operation and replacing compressed air lances with localized blowers.