

# EMCO ENTERPRISE INC.

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## COMPANY BACKGROUND



DES MOINES

EMCO Enterprise Inc. is a fully owned subsidiary of Andersen Corporation. The company is the leading manufacturer of storm doors in the United States and employs more than 500 people at its two locations: Des Moines, Iowa and Luray, Virginia. EMCO produces 15 different types of storm doors with features that provide energy efficiency, security and durability.

## PROJECT BACKGROUND

This is the second consecutive year that EMCO has participated in the Pollution Prevention Intern Program. Several areas of operation have potential energy and environmental savings. The intern focused on reducing compressed air leaks and demand, setting up a sustainable recycling program and exploring lighting options.

## INCENTIVES TO CHANGE

EMCO is committed to making a positive impact on the environment. The company has initiated an ECO 3 system that emphasizes reusing materials, recycling and reducing waste. The facility's compressed air system accounts for a large portion of the monthly electric bill and is not monitored as effectively as other utilities. Reducing and eliminating inefficiencies and associated costs are major incentives to change.

## RESULTS

**Compressed Air Leaks:** The intern found 177 air leaks after conducting a compressed air audit using an ultrasonic leak detector. These leaks account for approximately 40 percent of the total compressed air demand of the plant. The leaks were fixed and a continuous leak detection program was set up through preventative maintenance personnel. By following the program, maintenance should be able to detect and fix approximately 400 cubic feet per minute of air leak volumetric flow each year. Fixing the leaks is a straightforward process that may involve replacing common fittings, adding pipe thread sealant or tightening fittings. The return on investment is usually one to two weeks.

**Compressed Air Component Shut Down:** The compressors had been started three hours before production began every day. By starting the compressors two and one-half

hours before production, 130,000 kWh will be saved each year. The 50 horsepower compressor is on for testing continuously, outside of production hours. If this usage were decreased by 50 percent, almost 100,000 kWh could be saved annually.

**Heat Recovery:** Most of the compressors have a heat recovery system that provides space heating for the plant. However, one of the most frequently used compressors does not have a system to recover heat. If such a system were put in place, up to 80 percent of the energy used to power the compressor could be recoverable heat.

**Pressure Reduction:** A pressure reduction of 1 pound per square inch is equivalent to 0.5 percent of total



energy reduction. With the leak detection program and several other measures in place, EMCO could handle a reduction of 10 pounds per square inch.

**Lighting:** Currently, the plant uses T12 bulbs in most of its 1,500 fixtures. The best options to switch to are LEDs or T8 bulbs. The plan with the best return on investment is to replace every T12 bulb in the plant with a T8 bulb.

**Recycling:** The Dixon facility supports the main Walnut location by warehousing raw materials and distributing small parts. Before this project, there was no recycling at the Dixon facility except for office recycling. After the intern established a method to separate recyclable materials and trash, cardboard started to be recycled. About 109 tons of waste will be diverted from the landfill annually through increased recycling.



## CONVENTIONAL AIR POLLUTANTS AND GREEN HOUSE GASES DIVERTED IN STANDARD TONS

Total for all sectors					
CO <sub>2</sub>	SO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CFC	PM-10
979.11	4.64	55.60	2.22	10.63	1.14

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
AIR LEAKS	\$30,456	507,595 KWH	IMPLEMENTED
LEAK DETECTION PROGRAM	\$19,188	319,800 KWH	IMPLEMENTED
END EARLY START UP	\$7,800	130,000 KWH	IMPLEMENTED
TURN OFF 50 HP COMPRESSOR	\$5,755	95,924 KWH	RECOMMENDED
HEAT RECOVERY	\$7,192	10,562 THERMS	RECOMMENDED
PRESSURE REDUCTION	\$4,000	66,667 KWH	RECOMMENDED
LIGHTING	\$10,021	273,727 KWH	RECOMMENDED
RECYCLING	\$10,638	109 TONS	IMPLEMENTED

