

Project Overview

Molex, Inc.
Lincoln, NE

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The Company

Molex Incorporated of Lincoln primarily manufactures connectors for electronic and automotive industries and employs 695 people in Lincoln at three separate locations: Upland, West Bond, and Progressive facilities. This report will focus on the operations at the Upland facility. The Upland facility is comprised of four main departments, which include: molding, stamping, plating, and assembly. To illustrate, pollution prevention is important to Molex to reduce/eliminate wastes to help meet continual improvement requirements, the Lincoln operations also have achieved ISO/QS 9000, ISO 14001, and ISO/TS16949 certifications.

Project Description

To address the significant amount of money spent by Molex on electricity each year, the 2005 summer project was to perform a comprehensive energy assessment of the building. Four different areas for potential savings were investigated during the summer, including variable frequency drive (VFD) motors on cooling tower fans, compressed air use and leaks, destratification of high-bay areas (over 20 feet), and sensor controlled lighting in non-production areas.

Pollution Prevention Benefits

Reducing the amount of electricity used by Molex will help to decrease the overall amount of fossil fuels and water used, and will reduce pollutants such as carbon dioxide, sulfur oxides, nitrogen oxides, and others from being released to the environment. The energy assessment will also result in more efficient production and electrical use at Molex and meet internal requirements for continual improvement.

Results

Recommendations included: placing a VFD on Cooling Tower #4's fan motor, changing plating blowoff nozzles, reducing plating blowoff pressure, and fixing air leaks throughout the facility. Also included in air leak analysis, is implementation of a tracking program. High-bay destratification and installing ultrasonic sensors to control bathroom lighting were recommended as well. Table 1 summarizes the projects and their individual results.

Intangible benefits from implementation of these projects, include reductions in noise levels throughout the facility from correcting compressed air problems. Also, by destratifying high-bay areas, the circulated air will create a more comfortable work area for employees. The installation of occupancy sensors will improve the company image by showing Molex is concerned about energy use and is implementing up-to-date technology. Lastly, Molex's reduction of electricity will allow periods of high demand in the community to be met more easily.

Table 1. Pollution Prevention Opportunities and Results

Pollution Prevention Opportunity	Electricity Saved (kWh)	Annual Cost Savings
VFD Fan Motor On Cooling Tower #4	43,929	\$1,841
Changing Plating Blowoff Nozzles	1,652,432	\$69,237
Reducing Plating Blowoff Pressure After Changing Nozzles 3(psi)	133,025	\$5,574
Fixing Air Leaks	648,272	\$27,163
Ultrasonic Detectors In Bathrooms	2,990	\$125
Totals	2,480,648	\$103,940