CNH AMERICA, LLC

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BURLINGTON

COMPANY BACKGROUND:
Case New Holland (CNH) was formed in 1999 when New Holland HV and Case Corporation merged, and is now part of the Fiat Group. Rising to be a leader in the manufacturing of construction and agricultural equipment, CNH is a global company with dealers in 170 locations and manufacturing plants in 16 countries. The Burlington plant is one of 11 CNH manufacturing plants in the United States. Approximately 600 people are employed at the Burlington plant, which makes tractor loader backhoes, utility tractors, rough terrain forklifts and combine headers.

PROJECT BACKGROUND

This is the fourth year of participation in the Pollution Prevention Intern Program for the CNH Burlington plant. The purpose of this year's 24-week project was to create an energy profile of the Burlington plant and identify opportunities for saving energy and reducing costs. Options included reducing demand and power factor costs. Other projects will be prioritized based on a matrix of efficiency and potential cost savings. The major focus was on lighting, ventilation and proper equipment efficiencies.

INCENTIVES TO CHANGE

CNH-Burlington spends more than $100,000 per month for electricity in the production plant. Peak demand charges and power factor charges account for a significant amount of this cost. This profile revealed preliminary information on where and when the energy is being used, in order to guide reduction efforts. An objective of the Fiat Industrial Group is to ensure that each of its plants is a "Green Plant".

RESULTS

Lighting Retrofit: The plant spends approximately $20,000 per month on lighting. This cost could be lowered by reducing excessive lighting, inefficiencies and improving controls. This project focused on improving efficiency in the lighting system. The predominant form of lighting at the plant has been 400 watt metal halide fixtures, although some areas have been upgraded to 320 watt fixtures. Retrofitting the lighting to 200 watt fluorescent fixtures would improve energy efficiency and control capabilities, resulting in reduced costs.

The proposed project is to retrofit two buildings that were determined to have higher lighting power density. In addition to new fixtures, occupancy sensors installed in certain areas could further reduce the energy load. The two buildings are mainly used for storage, light assembly and welding. The intern is evaluating an upgrade to fluorescent fixtures on several other buildings and installing control systems on all buildings.

Fan Replacement: Throughout the plant, more than 500 fans are used to keep workers comfortable. Most of these fans are old and inefficient wall-mounted units that contribute to the low power factor of the plant. The intern proposed to replace 295 of these fans with new units that have a significantly higher power factor and the ability to either increase or match the performance of the current fans.

On-Going Projects: In the next 12-weeks, the intern will evaluate strategies and prioritize recommendations for reducing energy usage. The intern will focus his evaluation on three main areas of the plant including the heating, ventilation and air conditioning (HVAC) system, ovens used in the paint curing system, and alternative energy generation.

The HVAC system has served the company well for many years. Much of the equipment is now more than 40 years old and some is no longer operational. Many new technologies have been developed since this equipment was originally put into service. The company also experiences an air balance problem during the winter when all the doors are closed.

A large, multi-component oven, used to cure paint on the parts, is housed in a 60-foot-tall building. All parts combined, the oven uses around 1,000 KW and 232 therms per hour when operating. Some of the components run continuously to prevent the paint from solidifying. The intern will evaluate retrofits for the oven to reduce the amount of energy used in the curing process.

The intern will research purchase, installation, and operating costs of alternative technologies for generating electricity. To be cost effective, it is important that a plant become as efficient as possible before investing in alternative energy technologies so that the new system may be sized correctly and operate efficiently once installed. The intern will provide information on initial considerations for using solar technology to run water heating and space heating systems and on hydroelectric generation to provide electricity to the plant.