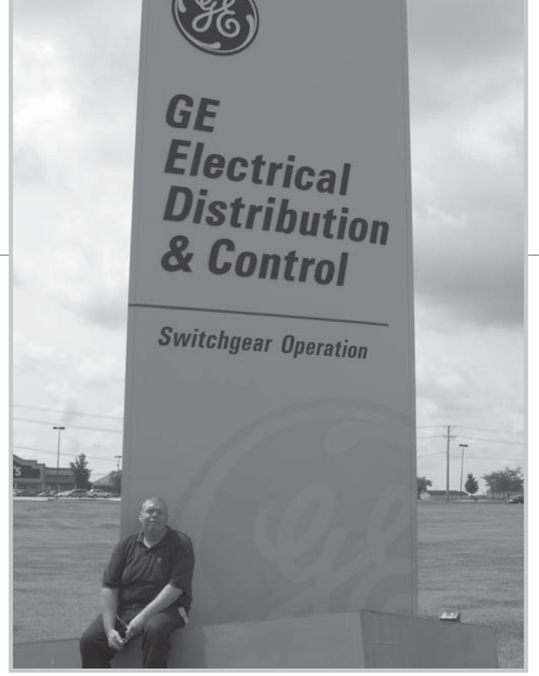
GE CONSUMER & INDUSTRIAL

COMPANY BACKGROUND

General Electric (GE) is a global technology and services conglomerate based out of New York. GE produces a wide variety of products ranging from medical software to aircraft jet engines. The company's roots reach back to 1878 when founder Thomas Edison formed the Edison General Electric Company. In 1892 Edison General Electric Company merged with rival Thomson-Houston Electric Company to form the General Electric Company.

WEST BURLINGTON



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PROJECT BACKGROUND

The West Burlington facility uses roughly 4 million gallons of water annually. Sixty percent of water discharge is from plating processes. The aim of this project was to cut water-associated costs in half by implementing water reduction and reuse projects.

INCENTIVES TO CHANGE

It costs approximately 37 cents to treat a gallon of water using an on-site waste treatment facility. With the facility currently downsizing, there is an incentive to lower operating costs. The waste treatment facility utilizes flocculation to treat water, which generates roughly 39 tons of dry sludge a year.

RESULTS

Tin Plating Loop Closure: Currently the tin plating line uses three rinse tanks, each overflowing at 1 gpm. By redoing the plumbing so the tanks cascade into one another, the flow can be reduced from 3 gpm to 1 gpm. By installing a 1/15 hp pump, a small tank, a level control mechanism and an ion exchange unit, the loop can be closed, further reducing the outgoing water.

Silver Reclamation: Installing a carbon pack on the silver plating line and closing the loop will save 0.5 gpm of water from going to the wastewater treatment facility. The silver cyanide collected on the carbon then can be sent to a refinery to generate over $200 dollars a week in recovered silver.

VIPO Waste Water Reuse: A current overflow rate of 7 to 8 gpm in the VIPO process yields an opportunity to save up to 1,920,000 gallons of water per year by reusing the water in another process. Reusing the water in the E-coat process appears to be such an opportunity. The company will evaluate the transferring requirements at a later date. Additional research might be considered for recovery and reuse within the process if the production levels do not remain equal.

E-coat Alkaline Cleaner Recovery: Prior to plant size reduction, a project to install a baffle tank to separate oil from the alkaline cleaner used in E-coat had been considered. By redesigning the model of the original baffle tank, 1.5 barrels of cleaner can be saved per quarter.

Waste Cost Treatment Reduction: By employing methods to reduce the amount of chemical usage, the cost of treating a gallon of water can be decreased substantially. One method would be to use proportional pumps to provide tighter control on pH adjustment. In addition, modifying overhanging chemical lines by adding an elbow to them would reduce the amount wasted when the pump switches off. Finally, by conducting jar tests with equipment found on site the amount of chemical used can be optimized to reduce chemical purchasing expenditures.

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
TIN PLATING LINE LOOP CLOSURE	$19,980	540,000 GALLONS OF WATER	RECOMMENDED
SILVER RECLAMATION	$16,488	90,000 GALLONS OF WATER	RECOMMENDED
VIPO WASTE WATER REUSE	$71,040	1,920,000 GALLONS OF WATER	RECOMMENDED
ALKALINE CLEANER RECOVERY	$3,600	—	RECOMMENDED

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	38.83
CH4	508.2
N2O	268.4
CFCS	816.2