

Sara Lee Foods

COMPANY BACKGROUND



Sara Lee Foods, Storm Lake Plant division, is a large-scale turkey harvesting facility employing approximately 660 people. The facility was founded by Bert Vilas; then in 1902 the company expanded and changed its name to Bil-Mar Foods. In 1987, Sara Lee Foods purchased the plant from Bil-Mar and the company has been expanding its processes ever since. The plant processes more than 8.1 million birds each year, resulting in 232 million pounds of finished product.

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PROJECT BACKGROUND

Sara Lee Foods continuously assesses its environmental performance and upholds environmentally friendly practices that respect the earth and its restricted resources. The main projects pursued during the summer focused on monitoring and reducing water and energy usage and examining the use of raw materials.

INCENTIVES TO CHANGE

Sara Lee Foods attempts to meet or surpass pertinent environmental laws and regulations and to continuously improve environmental performance through resource conservation, water and energy efficiency, waste curtailment, and well-organized use of raw resources. Sara Lee promotes the value of the environment around the world through sustainable environmental activities. As new regulations are implemented, the company constantly seeks new ways to conserve water, reduce energy use and decrease costs.

RESULTS

Water Conservation: An initial investigation determined that there were a number of areas in the plant where excess water was used. A water audit was conducted and areas with opportunities for improvement were identified. Recommended changes include: installing aerators on hand wash stations, installing a new valve on the thigh deboner, installing a photo eye on a bird wash and diverting the cavity overflow from one of the meat chillers. Behavioral changes were also made in order to conserve water by staff, including turning off water to all production machines during breaks and lunches. These changes resulted in a savings of \$27,310 in water, heating, cooling, and chemical costs.



Chiller water re-use: There are three large meat chillers at Sara Lee that hold a total of 100,000 gallons of water. This project would involve reusing some of the water from the final chiller in a preliminary chiller. This project could save 25,000 gallons of water daily. It would also reduce cooling and chemical costs, with annual savings of approximately \$50,580.

Boiler Insulation: Sara Lee Foods uses steam for heating water and for different processes throughout the plant. Adding insulation to the boiler tanks, condensate return lines, hot water lines, and other processes would result in significant energy savings. It was recommended that Sara Lee insulate 900 feet of bare piping and add 60 insulating blankets, resulting in an energy savings of 47,600 therms.

Stack Economizer: Installing a boiler economizer could reduce operating costs by recovering energy from flue gas. This would be a feasible project because there would be little condensate returned in the steam system, resulting in annual savings of \$10,990 for the company.

Reverse Osmosis System: Installing a reverse osmosis system to remove particulates from the boiler feedwater is an attractive project. It would reduce blow-down as well as chemical usage, and would save water, sewer, and chemical costs.

Energy Improvements: Adding occupancy sensors to the lighting in the offices, hallways, and storerooms, and installing vending misers in the cafeteria will result in energy and cost savings.



AIR POLLUTANTS DIVERTED IN TONS

Total for all sectors	
SO ₂	0.372
CO	0.522
NO _x	0.325
VOC	0.707
PM	0.031

GREEN HOUSE GASES DIVERTED IN TONS (CO₂ Equivalent)

Total for all sectors	
CO ₂	134.224
CH ₄	428.381
N ₂ O	0.469
CFC	1.518

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
WATER CONSERVATION	\$27,310	3,580,000 GALLONS 6,430 THERMS	IMPLEMENTING
CHILLER WATER RE-USE	\$50,580	6,500,000 GALLONS 15,480 THERMS	RECOMMENDED
BOILER INSULATION	\$40,280	47,600 THERMS	RECOMMENDED
STACK ECONOMIZER	\$10,990	13,100 THERMS	RECOMMENDED
REVERSE OSMOSIS SYSTEM	\$7,080	255,000 GALLONS 9,400 THERMS	RECOMMENDED
ENERGY IMPROVEMENTS	\$1,430	35,750 KWH	IMPLEMENTING