Sara Lee Foods

CASE SUMMARY 18

SARA LEE FOODS

Storm Lake, Iowa
Buena Vista County

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The Company

Sara Lee Foods, a division of the Sara Lee Corporation, produces many brands in the food, clothing and household products industries. However, the Storm Lake facility is the only turkey slaughtering plant within Sara Lee. Storm Lake also does some packaging onsite, but ships most product for further processing.

Project Background

The Sara Lee Corporation is dedicated to preserving the environmental integrity of its company and the Storm Lake facility is no exception. Scrap metal, light bulbs, batteries, used oil, aerosol cans, wood, paper, magazines, newspaper, cardboard and plastics are currently recycled. Furthermore, wastewater effluent is reused to cool vacuum pumps and clean rotary screens.

Incentives to Change

Sara Lee – Storm Lake is currently among industry leaders in pounds of waste per 100 pounds produced and gallons of water used per bird processed. Even with this record, Sara Lee is always looking for ways to become more efficient and reduce its effect on the environment.

Results

Six opportunities for potential savings are:

1. **Eliminating individual hydraulics** - $5,700
Three machines in one department had individual hydraulic systems and were using once-through cooling water to cool these hydraulics. Investigation showed that extra hydraulic space existed in a centralized hydraulic system in another department. Piping is being installed and the three separate machines will be eliminated.

2. **Restricting water flow** – $7,200
A scalder is used to scald the birds before the defeathering process, requiring a constant make-up

water flow. It was determined that the make-up water flow rate was twice as much as needed. A restricting valve was installed to only allow the flow needed to the scalder.

3. **Recycle packaging** - $4,600
Some packaging is done onsite with a vacuum seal package. The packaging consists of two materials combined together to allow favorable responses in both hot and cold situations, making this material difficult to market as a recyclable material. Connections were made between Sara Lee's current recycler and another vendor who can recycle the packaging.

4. **Heat exchanger** -Savings not quantified
Sara Lee uses chillers equipped with air blowers for flotation and agitation purposes. The blowers emit hot air into a chiller that needs to be kept cold. When the chiller is not at proper temperature, dry ice must be used to cool the meat and prevent Quality Assurance (QA) issues. Even though exact savings for the heat exchanger project cannot be determined, the project has many benefits including reduced CO_2 usage and improved QA controls.

5. **VRTX technologies** - $14,000
A VRTX system is a cooling tower water treatment system that kills bacteria and precipitates, and back flushes calcium from the water. Since the water is then undersaturated with calcium, any existing scale would be eroded away and removed, allowing Sara Lee's evaporative condensers to operate without chemical additives and increase system efficiency.

6. **Kemco systems** - $232,000
Sara Lee currently uses a boiler to produce steam, which is injected into water for sanitation and other hot water usage. The preferred alternative is to install a direct flame contact hot water heater. This would replace the boiler entirely, saving on chemical usage and resulting in a 30 percent efficiency gain. Furthermore, a boiler at the Sara Lee feed mill produces steam to be used in the pellet making process. An instantaneous steam generator can replace this boiler, which would save on chemicals and again result in a 30 percent efficiency gain.

Project Summary Table

Issue	P2/ Waste Reduction Option	Reduction Opportunities	Annual Cost Savings	Status
Once-through cooling water	Eliminate individual hydraulics	1.2 million gal water/yr 60,550 kWh/yr	$5,700	Implementing
Excessive make-up water	Restricting water flow	2.35 million gal water/ yr	$7,200	Implementing
Plastic recycling	Recycle packaging	48 tons/yr diverted	$4,600	Implemented
Extra heat load in bird chillers	Heat exchanger	381,000 BTU/day to $1,144,000 BTU/day	not quantified	Investigating
Evaporative condenser water conditioning	VRTX technologies	2 million gal water/yr 200 gal haz. chemical	$14,000	Investigating
Boiler inefficiency	Kemco Systems	23.8 billion BTU natural gas 2,000 gal haz. chemical	$232,000	Vigorously investigating
TOTAL			$263,500	