Kraft Foods

CASE SUMMARY 10

KRAFT FOODS N. AMERICA

Oscar Mayer Foods Division
Davenport, Iowa
Scott County

Intern: Luke Koele
Major: Chemical Engineering
School: University of Iowa

The Company

Kraft Foods, Inc. is the largest branded food and beverage company in North America and second largest in the world with revenues in 2001 near $34 billion. Kraft has over 200 manufacturing and processing facilities worldwide. The Davenport facility is part of Kraft's Central Operations Area and produces various processed meat products, such as sliced luncheon meats, hot dogs, Lunchables lunch combinations, and foodservice meat products for the companies Oscar Mayer Foods Division. The Davenport facility employs approximately 1,700 people and operates 24 hours a day, 7 days a week.

Project Background

One of Kraft's environmental goals is to continually seek ways to eliminate or reduce discharges to the land, water, and air, conserve resources, and recycle and reuse materials. To help achieve this goal, Kraft has developed a computer-based tool called the Kraft Environmental Management System (KEMS). As part of this initiative, each plant continually looks for ways to reduce waste and improve plant productivity.

Incentives to Change

Utility costs are a significant operating expense for the Davenport facility. As a result, the facility actively targets these costs for savings opportunities.

Results

One of the cooling loop processes located in the powerhouse was identified for potential water savings. The boiler reservoir cooling loop utilized city water to cool ammonia compressors, air compressors, boiler fans, boiler stokers, and various pumps and heat exchangers. The current design utilizes a single reservoir, which serves as both the supply and return sump. The current system pulls a slipstream from the return and sends it to a fluid cooler to discharge heat gain to the atmosphere. The fluid cooler is not large enough to discharge all of the heat gained through the cooling process to the atmosphere. As a result, the reservoir temperature rises as heat is picked up. Once the reservoir temperature rises above 90°F, the water is no longer effective in cooling part of the equipment in the loop. Under current operation, the facility has to bring in fresh city water and discharge part of the flow to the sewer to drop the reservoir temperature below 90°F.

To eliminate this discharge of water a new boiler reservoir cooling system was designed. This new reservoir is designed to effectively cool the equipment in the current loop and discharge the heat gained to the atmosphere, effectively eliminating the incoming water charges. The new system will segregate the warm water return from the cool water supply. The warm water return will then be pumped over a new fluid cooler designed to handle the full flow (1,500 GPM) and drop the temperature to 85°F at design conditions.

All preliminary engineering was completed during the internship and a request for appropriation submitted and approved. Kraft expects the project to be fully implemented by year-end. When implemented, the project is expected to reduce the city water consumption by an estimated 70 million gallons annually. The projected payback period for this project is less than two years.