SYSCO Food Services

SYSCO Food Services is the nation's largest food service marketer and distributor, headquartered in Houston, Texas. SYSCO Food Services of Spokane, Wash., built a new 110,000 square foot distribution center in Post Falls, Idaho, in 2005. The company wanted a plant that would conserve energy and keep its operating costs as low as possible. They hired Cascade Energy Engineering Inc. of Walla Walla, Wash., to design an efficient energy system.

case study

Project at a Glance

1) Total cost over a standard system was about $310,000, partially funded by the Bonneville Power Administration.
2) Electricity savings of 1,266,383 kilowatt-hours per year — a 41.2 percent reduction.
3) Electricity cost savings is $40,000 per year.
4) Energy saved could meet the needs of more than 100 Northwest homes.
5) Kootenai Electric Cooperative's energy-efficiency incentive was $152,000, through BPA's Conservation Augmentation (ConAug) program.
6) Simple payback after the incentives was 3.7 years.
7) Without the utility incentive, the simple payback would have been 7.6 years.

By paying a portion of the increased cost for the energy efficiency part of the project, BPA and Kootenai Electric Cooperative helped SYSCO justify installing non-standard high-efficiency measures in the Post Falls plant. The reduced energy bills were an inducement for SYSCO to bear the higher up-front costs to install energy-saving equipment that would yield energy and cost savings in the near future.

BONNEVILLE POWER ADMINISTRATION

Project Background

Kootenai Electric Cooperative of Hayden, Idaho, provides electric service to the SYSCO Post Falls plant. KEC applied to BPA for a project under BPA's ConAug program. Cascade Energy Engineering and KEC worked with SYSCO to design a state-of-the-art energy efficient lighting and refrigeration system. The net reduced energy from the project comes to nearly 1.3 million kWh a year, for a savings to SYSCO of more than $40,000 each year in plant operating costs.

Project Overview

The SYSCO Post Falls plant had several energy efficiency measures installed for its lighting and refrigeration system, including the following:

1) Reduced condensing pressure — an additional dedicated hot gas compressor was installed to enable adequate defrost operations so that other system compressors could operate at a lower discharge pressure;

2) Variable VI compressors — compressors with variable internal volume ratios, as opposed to fixed, allow the system to operate efficiently over a range of conditions;

3) Evaporator fan variable frequency drives (VFD) — use of varying fan speeds to respond to load needs reduced fan energy consumption and refrigeration load from fan heat;

Ray Ingram, Sysco Post Falls, and Larry Bryant, Kootenai Electric Cooperative, stand in front of a new condensing unit on the roof of the building.

4) Condenser optimization — a larger, more efficient condenser with VFD control was used that can operate at more efficient settings;

5) Bi-level lighting — more efficient controls were installed for the metal halide lighting system in the warehouses, including motion sensors and two different levels of lighting that reduce energy consumption and refrigeration load for coolers and freezers; and

6) Compressor VFDs — variable frequency drive controls for compressors provide more efficient part-load operation of the system.