Food Bank enhances energy efficiency, receives utility rebate after upgrading with Emerson™

Result

- West Ohio Food Bank reduced energy cost, improved system reliability and received a rebate check in the amount of from AEP $2,449.43 Ohio, the local energy provider
- All-Temp Refrigeration gained valuable experience with low condensing and digital retrofit technology, including installing the Emerson EX valve, VFD fan control and digital controller
- West Ohio Food Bank's operating budget is more stable and unexpected repairs and maintenance have been minimized

Application

Food storage freezer

Customer

The West Ohio Food Bank is an affiliate of Feeding America, the nation's largest hunger relief organization. It serves 170 food pantries, soup kitchens and shelters throughout 11 counties in western Ohio.

Challenge

Operational efficiency is key for any food storage and distribution facility, however a food bank typically operates on a budget that relies on the kindness of individual and corporate donors. Keeping operating costs low and maintaining capital equipment is imperative for the organization to serve those who depend on it. The West Ohio Food Bank is housed in a 30-year-old building that had been a food distribution facility prior to the Food Bank taking occupancy in 2006.

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All of the freezer and refrigeration system's mechanical components were the same age as the building, and maintenance increased to the point where the need to replace some of the components became evident. This was driven home due to expenditures of $20,000 for emergency repair costs.

The Food Bank learned of the potential energy savings a low condensing system would provide and opted to replace the existing compressor and rewire the unit with a digital controller. The local utility, AEP Ohio , offered a business incentive rebate if systems such as this were installed.

Solution

The Food Bank worked closely with Emerson Climate Technologies, Inc. and All-Temp Refrigeration, Inc., a Division of ATR Mechanical, of Delphos, Ohio. As the floating head concept is relatively new to food storage, the installation and initial operation was a learning experience for both the Food Bank operations staff and the contractor. Assistance by Emerson personnel helped keep installation and start-up on track. The system now operates at lower temperature. A data logging device was installed to verify the energy efficiency improvement for the AEP Ohio rebate program application.

Summary

The Copeland Digital Discus Compressor, Digital XC643 Controller, Emerson electronic expansion valves (EXV) and drivers, and Control Techniques Variable Frequency Drive (VFD) Condenser Fan controller combine to offer greater efficiency and system reliability. The keys to energy efficiency are the Copeland digital technology, which provides effective load matching, and low condensing, which is enabled by the EXV valve and condensing fan variable frequency drive.

For more information to achieve these benefits in your application, contact:
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